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=> fil hcaplus
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FILE COVERS 1907 - 22 May 2006  VOL 144 ISS 22
FILE LAST UPDATED: 21 May 2006  (20060521/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

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=> d stat que l22
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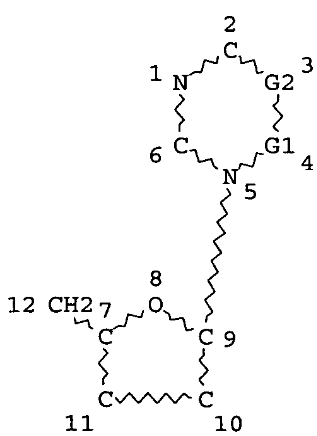


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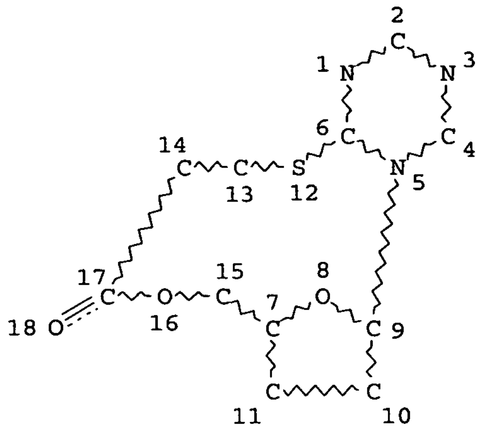

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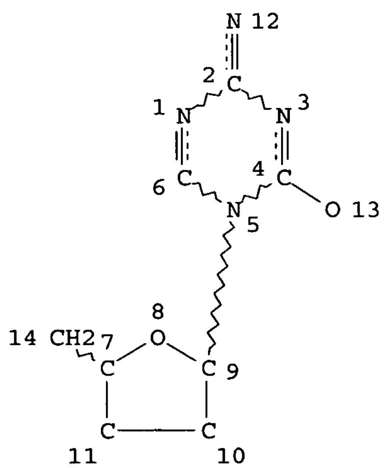
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L15 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

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L22	3	SEA FILE=HCAPLUS ABB=ON PLU=ON L19 OR L21

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=>

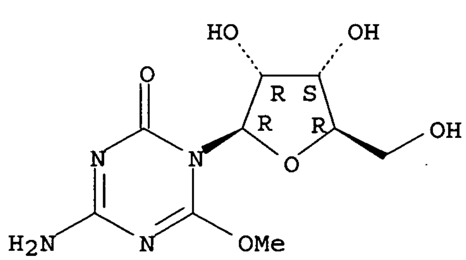
=> d ibib abs hitstr l22 1-3

L22 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:1002298 HCAPLUS
DOCUMENT NUMBER: 124:176774
TITLE: Polarographic reduction and potential carcinogenicity of substituted 1,3,5-triazine nucleosides
AUTHOR(S): Novotny, Ladislav; Vachalkova, Anna; Piskala, Alois
CORPORATE SOURCE: Cancer Res. Inst., Slovak Acad. Sci., Bratislava, 812 32, Swed.
SOURCE: Collection of Czechoslovak Chemical Communications (1995), 60(9), 1469-75
CODEN: CCCCAK; ISSN: 0010-0765
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The DC polarog. reduction of 11 5-azacytidine (5-azaCyd) and 5-azauridine (5-azaUrd) derivs. in strictly anhydrous DMF was investigated. The reduction occurred within one two-electron step for all of the substances except 6-amino-3-(β-D-ribofuranosyl)-1,3,5-triazine-2,4(1H,3H)-dione, which was reduced in two one-electron steps. The 5-azaCyd monomethyl derivs. (6-methyl-5-azaCyd and N4-methyl-5-azaCyd) gave polarog. maxima of the 1st kind. Substitution in position 6 poses a marked hindrance to the reducibility of the nucleoside analogs. The α-lipoic acid test was applied to all the compds. to obtain the potential carcinogenicity index (tg α). The highest tg α value, viz. 0.372, was found for 6-methyl-5-azaCyd; this value even exceeds that of 5-azaCyd (0.295), a compound which has been included in the category of substances probably carcinogenic to humans in the WHO classification. For the majority of the remaining compds., the tg α values do not suggest any significant carcinogenic activity.

IT **126193-23-5**, 1,3,5-Triazin-2(1H)-one, 4-amino-6-methoxy-1-β-D-ribofuranosyl-
RL: ADV (Adverse effect, including toxicity); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(polarog. reduction and potential carcinogenicity of triazine nucleosides)
RN 126193-23-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-methoxy-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L22 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:158806 HCAPLUS

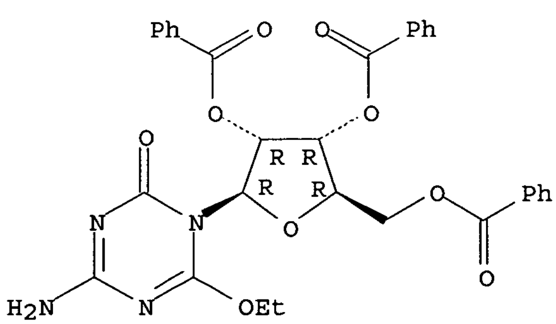
DOCUMENT NUMBER: 112:158806
TITLE: Synthesis, molecular conformation and biological activity of 6-amino-5-azacytidine
AUTHOR(S): Piskala, Alois; Hanna, Naeem B.; Zajicek, Jaroslav; Cihak, Alois
CORPORATE SOURCE: Inst. Org. Chem. Biochem., Czech. Acad. Sci., Prague, 166 10, Czech.
SOURCE: Collection of Czechoslovak Chemical Communications (1989), 54(9), 2502-12
CODEN: CCCCAK; ISSN: 0010-0765
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 112:158806
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Reaction of EtO2CNHC(:NH)NH2 with 2,3,5-tri-O-benzoyl-β-D-ribosyl isocyanate gave urea I, which was cyclized by bis(trimethylsilyl)acetamide to azacytidine II [R = OEt, R1 = Bz (III)]. Ammonolysis or methanolysis of III gave II (R = NH2, R1 = Bz; R = MeO, R1 = Bz). Reaction of I with Me3SiCl-Et3N gave nucleoside IV (R1 = Bz) which was also prepared by dealkylation of III with Me3SiCl or oxidation of azacytidine V with H2O2 in AcOH. Methanolysis of IV (R1 = Bz) gave IV (R1 = H). 1H-NMR spectra of II (R = NH2, R1 = H) revealed a marked preference of g+ (80%) rotamer around C(5')-C(4') bond, a predominance of S conformation of the ribose ring and a preference of anti conformation around the C-N glycosyl bond. This data indicate a conformational resemblance of II (R = NH2, R1 = H) to purine nucleosides. II (R = NH2, R1 = H) inhibits the growth of Escherichia coli while II (R = MeO, R1 = H) and IV (R1 = H) are bacteriostatically inactive.

IT **105331-02-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and methanolysis, hydrolysis, or aminolysis of)
RN 105331-02-0 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-ethoxy-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

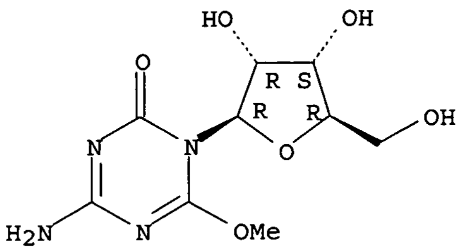
Absolute stereochemistry.



IT **126193-23-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and reactions and bioactivity of)
RN 126193-23-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-methoxy-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

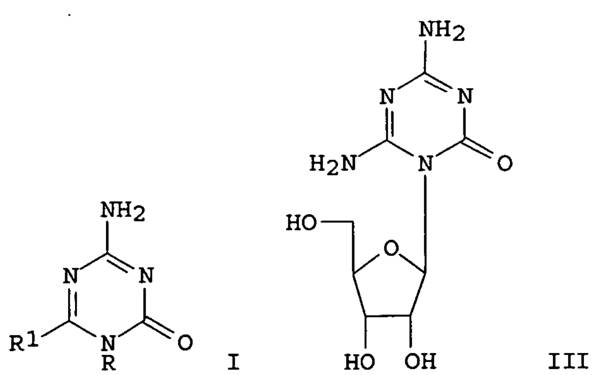


L22 ANSWER 3 OF 3 HCAPLUS

ACCESSION NUMBER: 1987:5377 HCAPLUS
DOCUMENT NUMBER: 106:5377
TITLE: 6-Amino-5-azacytosine nucleosides
INVENTOR(S): Piskala, Alois; Cihak, Alois; Vesely, Jiri
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 6 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 229068	B	19840514	CS 1981-6412	19810828
PRIORITY APPLN. INFO.:			CS 1981-6412	19810828

GI

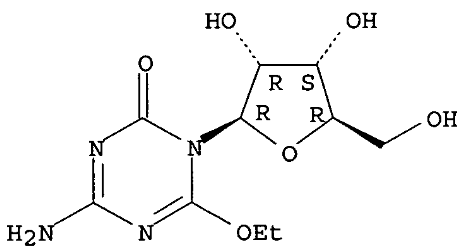


AB The title compds. (I; R = glycosyl; R1 = NH2) were prepared by reaction of H2NC(:NH)NHCO2Et (II) with R2NCO (R2 = protected glycosyl), cyclization of the resulting R2NHCON:C(NH2)NHCO2Et to give I (R = R2, R1 = OEt), and aminolysis and removal of the protecting groups in alc. NH3. Thus, 0.262 g II in 5 mL Me2CO was treated dropwise with 1 g 2,3,5-tri-O-benzoyl-β-D-ribofuranosyl isocyanate in 10 mL Me2CO, the mixture was kept 30 min, evaporated at <40°, and the remainder was kept in 10 mL MeCN with

2 mL AcN(SiMe3)2 for 30 min in a sealed flask. The product was treated with NH3 in MeOH, kept overnight in a stoppered flask and the product crystallized from MeOH to give 64% 6-amino-5-azacytidine (III). Analogously prepared was 6-amino-2'-deoxy-5-azacytidine (IV). At 100 µg/mL, III and IV gave 100% and 62% inhibition, resp., of the growth of Escherichia coli and inhibited adenosine kinase of a cell-free extract

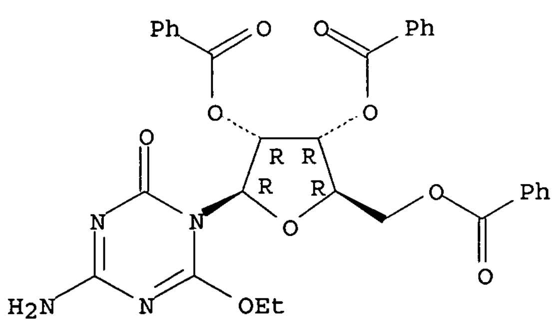
IT **105331-03-1P**, 6-Ethoxy-5-azacytidine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and aminolysis of)
RN 105331-03-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-ethoxy-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **105331-02-0P**, 2',3',5'-Tri-O-benzoyl-6-ethoxy-5-azacytidine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and aminolysis-debenzoylation of)
RN 105331-02-0 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-ethoxy-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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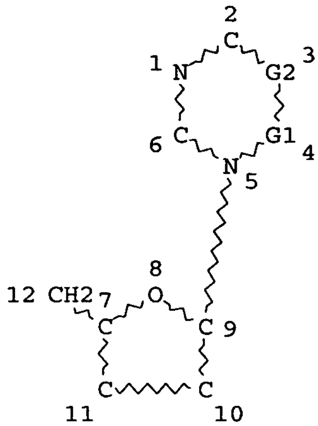

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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
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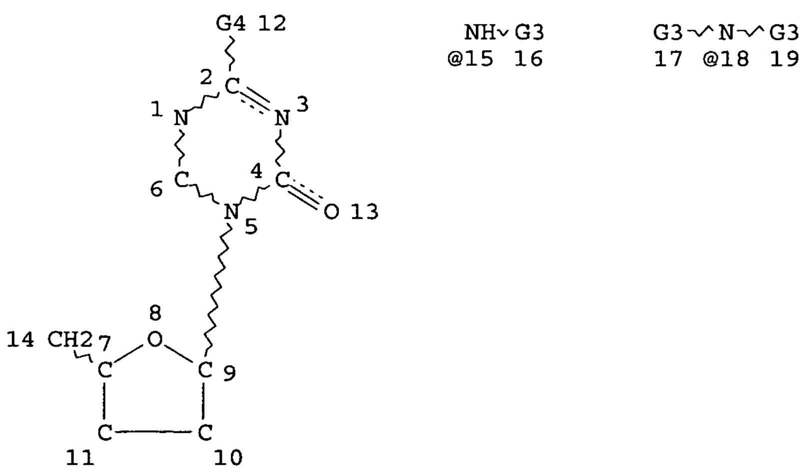
L9 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
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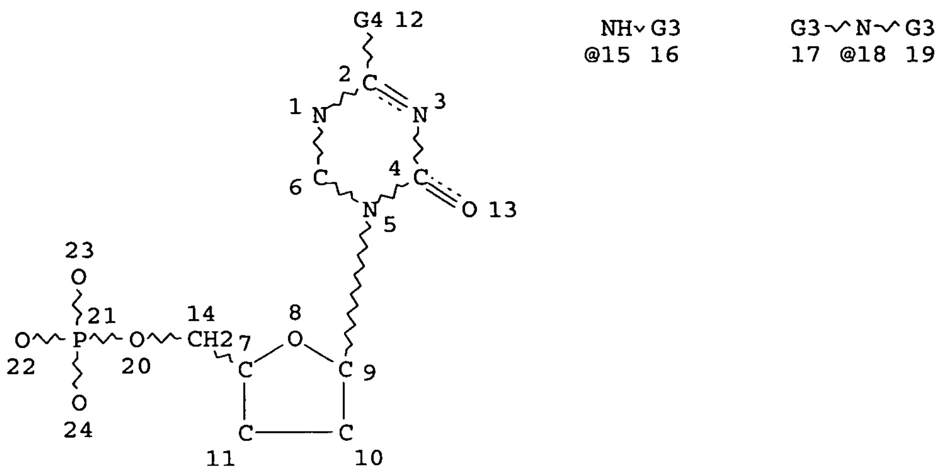
L23 STR



VAR G3=AK/CY
VAR G4=NH2/15/18
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
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L25 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L24

=> d ibib abs hitstr l25 1-37

L25 ANSWER 1 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:64429 HCAPLUS
DOCUMENT NUMBER: 144:307309
TITLE: Physical Nature of Interactions within the Active Site of Cytosine-5-methyltransferase
AUTHOR(S): Forde, Gareth K.; Kedzierski, Pawel; Sokalski, W. Andrzej; Forde, Aviane E.; Hill, Glake A.; Leszczynski, Jerzy
CORPORATE SOURCE: Computational Center for Molecular Structure and Interactions, Jackson State University, Jackson, MS, 392171, USA
SOURCE: Journal of Physical Chemistry A (2006), 110(6), 2308-2313
CODEN: JPCAFH; ISSN: 1089-5639
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The phys. nature of interactions within the active site of cytosine-5-methyltransferase (CMT) was studied using a variation-perturbation energy decomposition scheme defining a sequence of approx. intermol. interaction energy models. These models have been used

to analyze the catalytic activity of residues constituting cytosine-5-methyltransferase active site as well their role in the binding group of de novo designed inhibitors. Our results indicate that Glu119, Arg163, and Arg165 appear to play the dominant role in stabilizing the protonated transition state structure and their influence can be qual. approximated by electrostatic interactions alone. The stabilization of neutral structures of the alternative reaction pathway is small, which might suggest the protonated pathway as preferred by the enzyme. Exchange and delocalization terms are negligible in most cases, or they cancel each other to some extent. Interactions of inhibitors with the CMT active site are dominated by electrostatic multipole contributions in analogy with previously studied transition state analog inhibitors of leucyl aminopeptidase.

IT **879506-82-8**

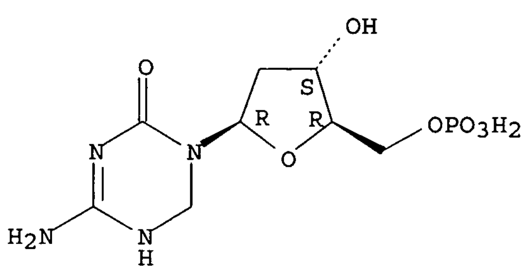
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)

(electrostatic interactions associated with active site residues Glu119, Arg163, and Arg165 have critical role in stabilizing protonated transition state structure of HhaI)

RN 879506-82-8 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED

Absolute stereochemistry.



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:216597 HCAPLUS

DOCUMENT NUMBER: 142:291323

TITLE: Compositions and methods for the treatment of severe acute respiratory syndrome (SARS)

INVENTOR(S): Hardee, Greg; Dellamary, Luis

PATENT ASSIGNEE(S): Isis Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 217 pp. CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005020885	A2	20050310	WO 2004-US16196	20040521
WO 2005020885	A3	20050804		

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NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-472774P P 20030521

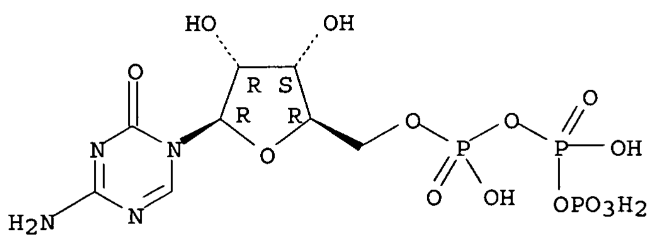
AB The invention provides compns. and methods for treating a coronavirus infection, especially a SARS CoV infection. The compns. comprise an antiviral nucleoside or mimetic thereof, or an antiviral antisense agent, in a form suitable for pulmonary or nasal delivery. The methods comprise administration to a patient in need thereof the effective amount of an antiviral composition by pulmonary or nasal instillation.

IT **2226-74-6**
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compns. and methods for treatment of severe acute respiratory syndrome)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 3 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:115314 HCAPLUS
DOCUMENT NUMBER: 137:20541
TITLE: Synthesis of oligonucleotide inhibitors of DNA (Cytosine-C5) methyltransferase containing 5-azacytosine residues at specific sites
AUTHOR(S): Garcia, Ramon Guimil; Brank, Adam S.; Christman, Judith K.; Marquez, Victor E.; Eritja, Ramon
CORPORATE SOURCE: European Molecular Biology Laboratory, Heidelberg, D-69117, Germany
SOURCE: Antisense & Nucleic Acid Drug Development (2001), 11(6), 369-378
CODEN: ANADF5; ISSN: 1087-2906
PUBLISHER: Mary Ann Liebert, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:20541

AB The incorporation of 5-azacytosine residues into DNA causes potent inhibition of DNA (Cytosine-C5) methyltransferases. The synthesis of oligodeoxyribonucleotides incorporating single or multiple 5-aza-2'-deoxycytidine residues at precise sites was undertaken to generate an array of sequences containing the reactive 5-azacytosine base as specific target sites for enzymic methylation. Preparation of these modified oligonucleotides requires the use of 2-(p-nitrophenyl)ethyloxycarbonyl

(NPEOC) groups for the protection of exocyclic amino functions. These groups are removed under mild conditions, thus avoiding conventional protocols that are detrimental to the integrity of the 5-azacytosine ring.

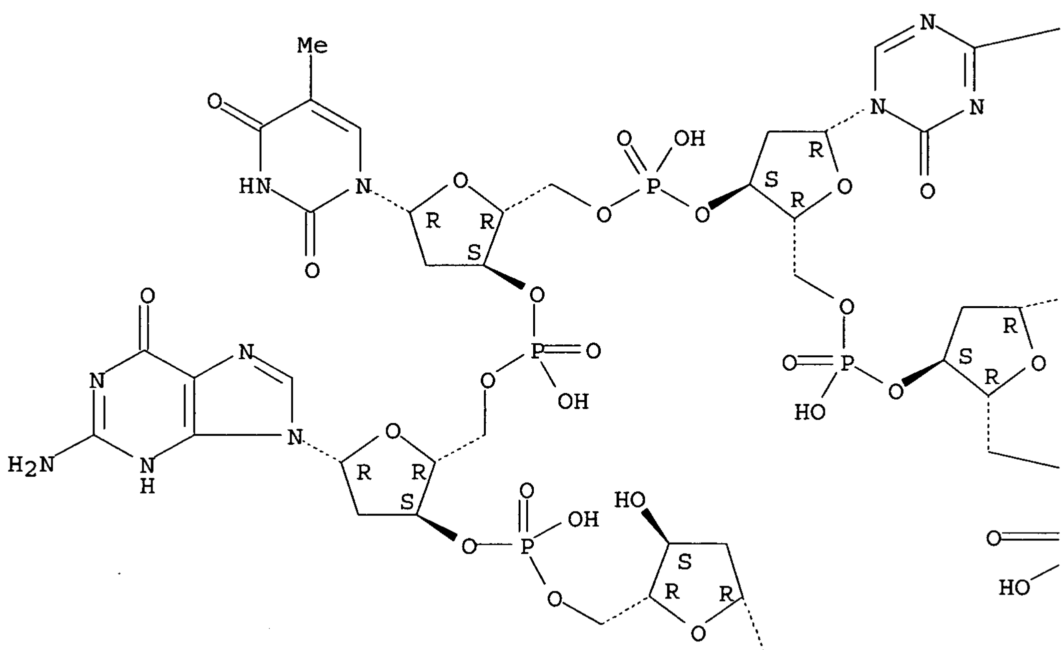
IT **198975-76-7P 198975-77-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of oligonucleotides containing 5-azacytosine residues at specific
sites for potential use as inhibitors of DNA (Cytosine-C5) methyltransferase)

RN 198975-76-7 HCAPLUS

CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-5-azacytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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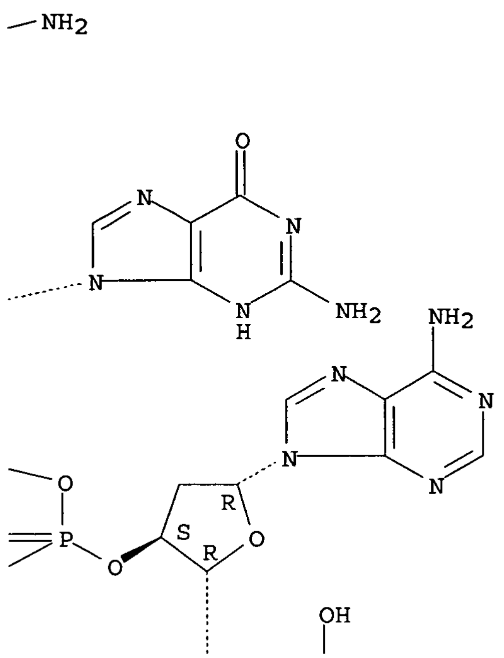

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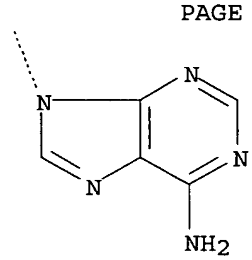

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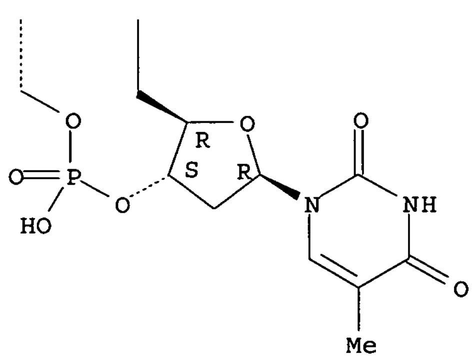
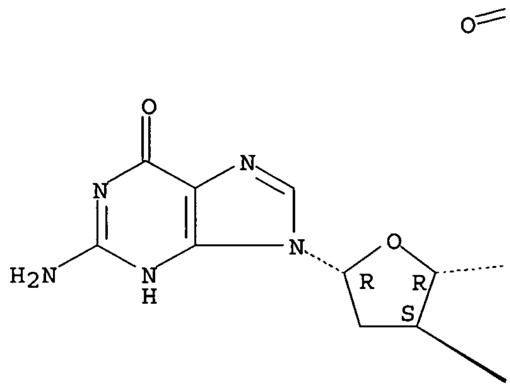


RN 198975-77-8 HCAPLUS
CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-

deoxy-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-
deoxy-5-azacytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-
deoxyguanylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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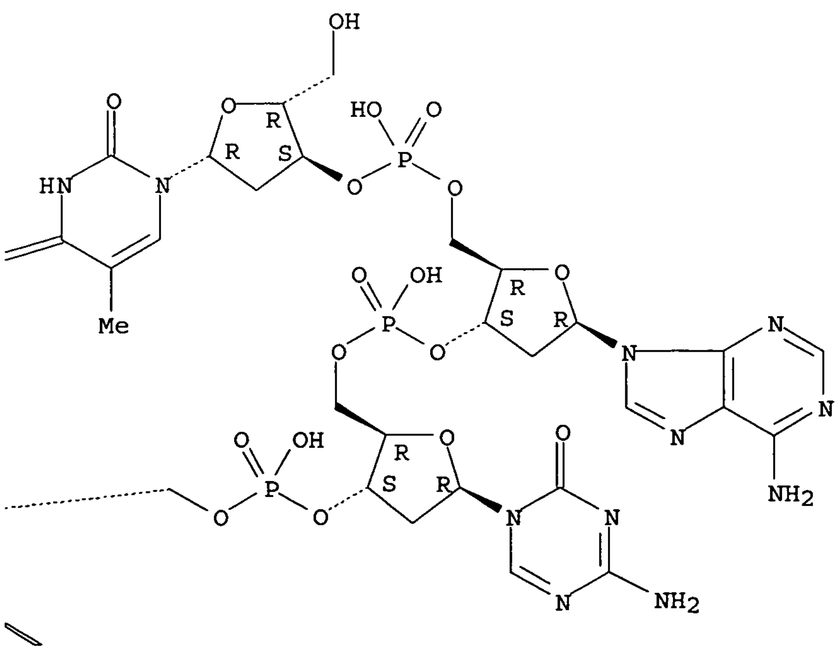

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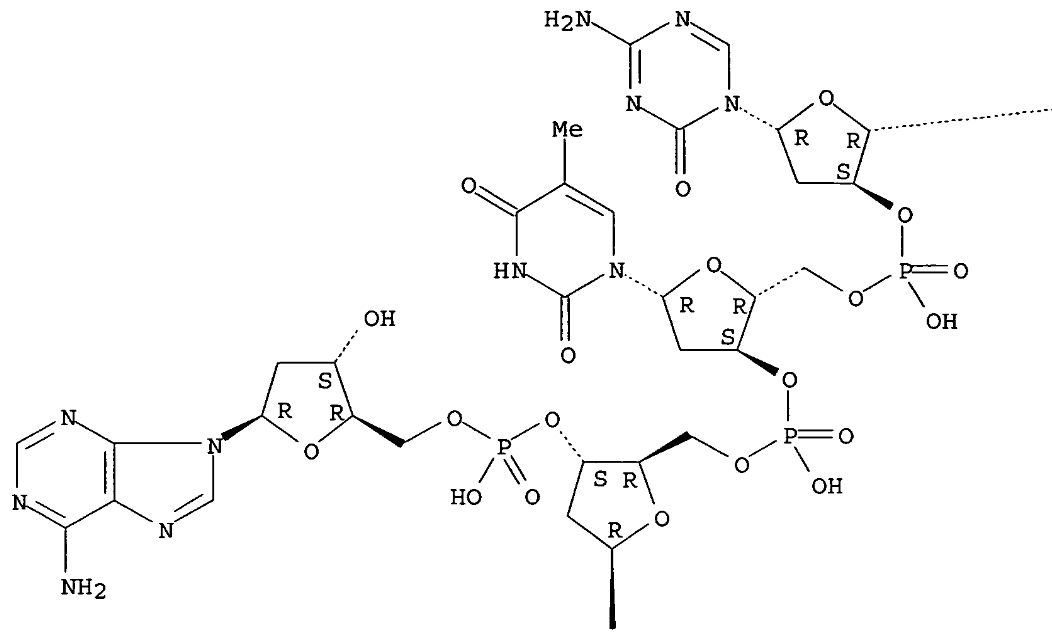

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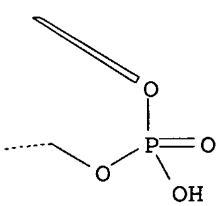

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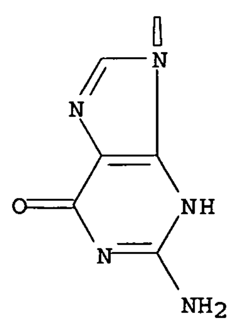


REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 4 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:757856 HCAPLUS
DOCUMENT NUMBER: 128:23093
TITLE: Synthesis and properties of oligonucleotides containing 5-aza-2'-deoxycytidine
AUTHOR(S): Eritja, Ramon; Marquez, Victor E.; Garcia, Ramon Guiimil
CORPORATE SOURCE: European Molecular Biology Laboratory, Heidelberg, D-69117, Germany
SOURCE: Nucleosides & Nucleotides (1997), 16(7-9), 1111-1114 CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The preparation of a protected derivative of 5-aza-2'-deoxycytidine carrying the
2-(p-nitrophenyl)ethyl group is described. The new derivative is useful for the preparation of oligonucleotides containing 5-aza-2'-deoxycytidine using a special methodol. that avoids the use of ammonia.

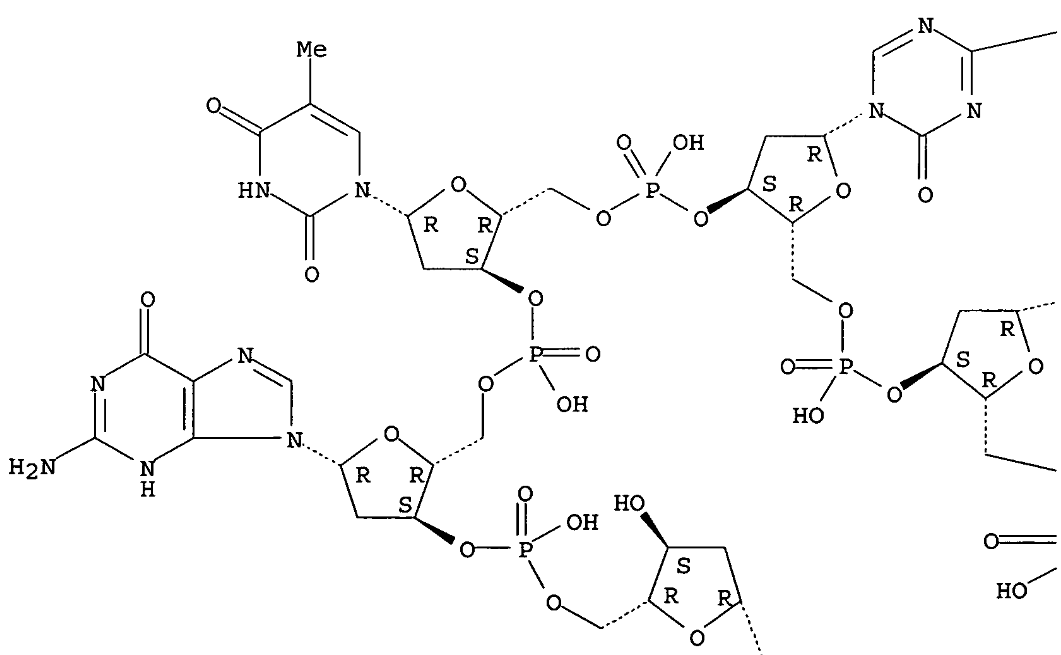
IT **198975-76-7P 198975-77-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and properties of oligonucleotides containing azadeoxycytidine)

RN 198975-76-7 HCAPLUS

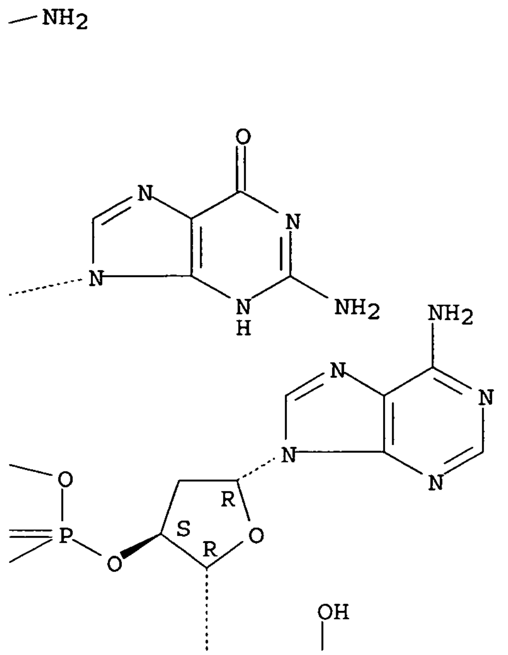
CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-5-azacytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

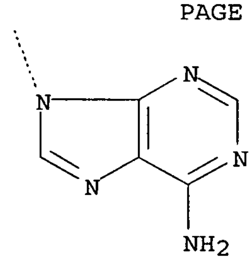
PAGE 1-A



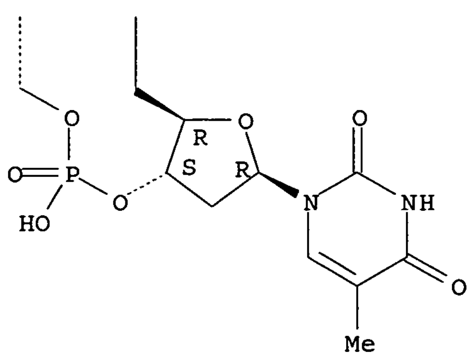
PAGE 1-B



PAGE 2-A



PAGE 2-B

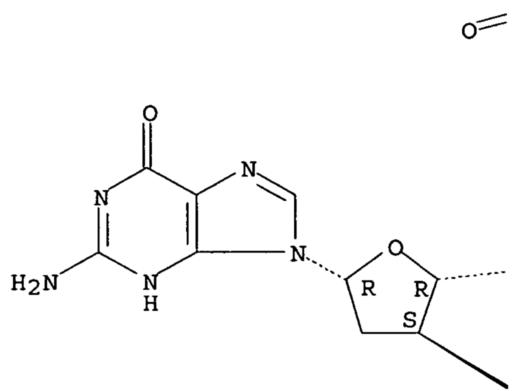


RN 198975-77-8 HCAPLUS
CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-

deoxy-5-azacytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-
deoxyguanylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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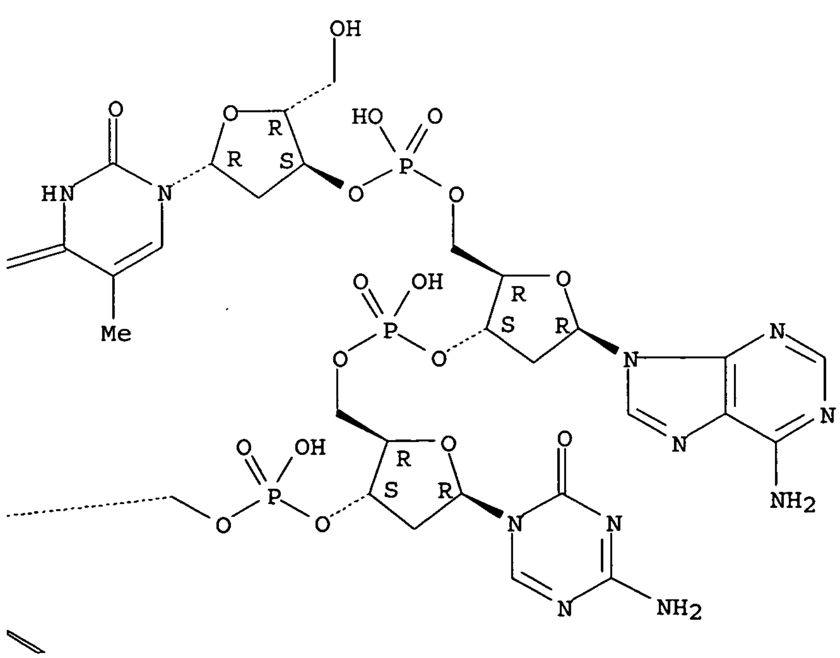

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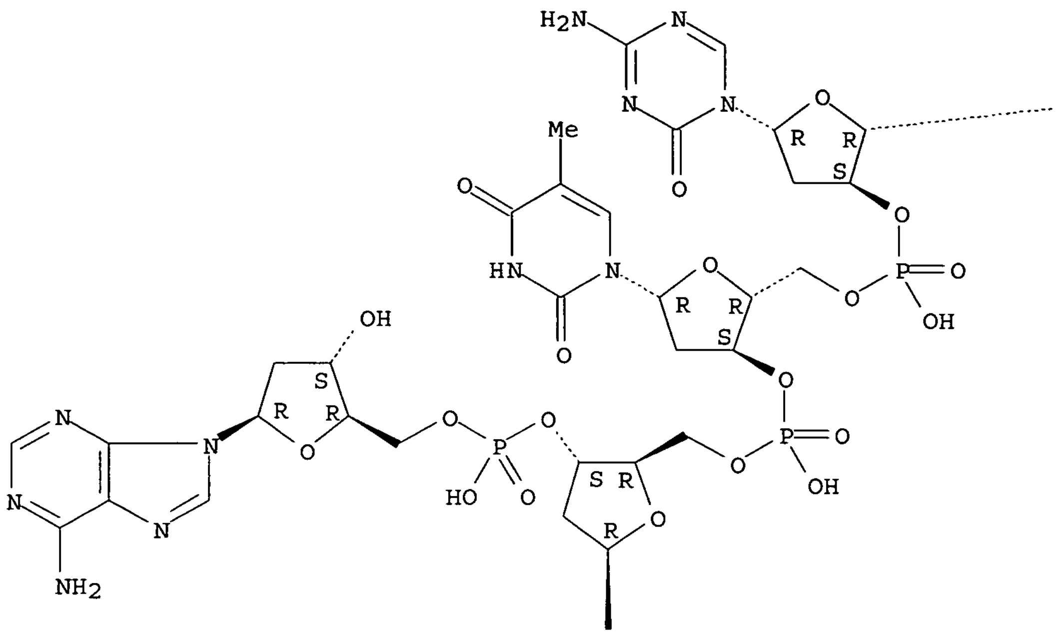
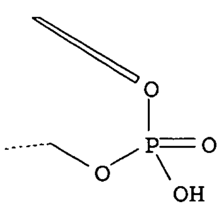


PAGE 2-B



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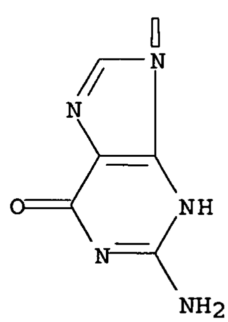


REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:887232 HCAPLUS
DOCUMENT NUMBER: 124:202870
TITLE: Preparation and properties of oligodeoxynucleotides containing 4-O-butylthymine, 2-fluorohypoxanthine and 5-azacytosine
AUTHOR(S): Avino, Anna; Garcia, Ramon Gueimil; Marquez, Victor E.; Eritja, Ramon
CORPORATE SOURCE: Dep. Molecular Genetics, CID-CSIC, Barcelona, E-08034, Spain
SOURCE: Bioorganic & Medicinal Chemistry Letters (1995), 5(20), 2331-6
CODEN: BMCLE8; ISSN: 0960-894X
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Oligodeoxyribonucleotide duplexes carrying the ammonia sensitive bases 4-O-butylthymine, 2-fluorohypoxanthine and 5-azacytosine have been prepared for the first time using a (p-nitrophenyl)ethyl as protective groups that avoids the use of nucleophiles during the final deprotection.

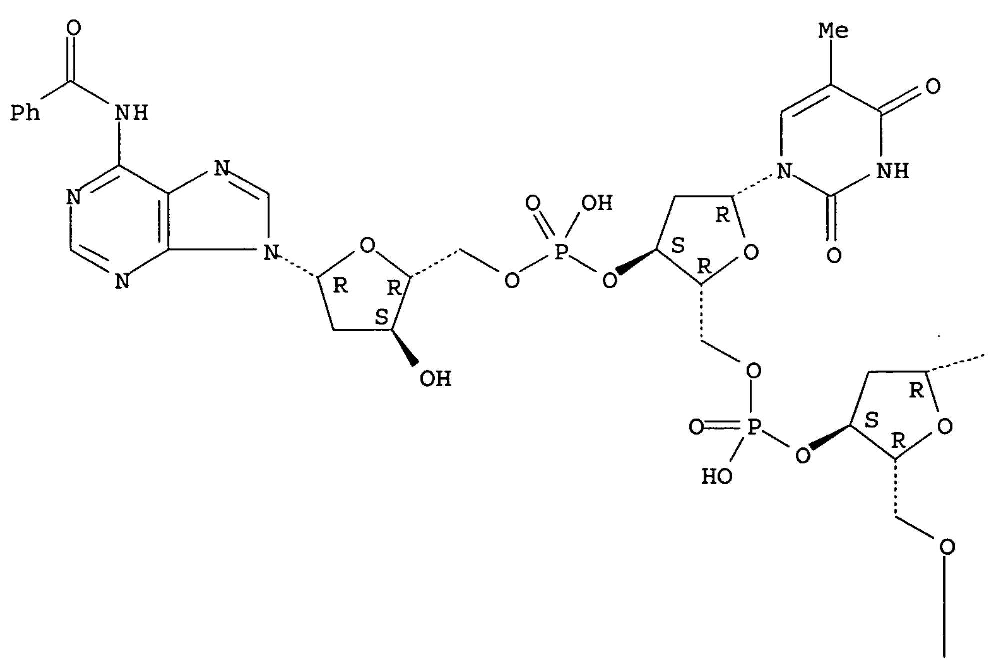
IT **172842-63-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and properties of oligodeoxyribonucleotides containing 4-O-butylthymine or 2-fluorohypoxanthine or 5-azacytosine)

RN 172842-63-6 HCAPLUS

CN Adenosine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy-5-azacytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-N-benzoyl-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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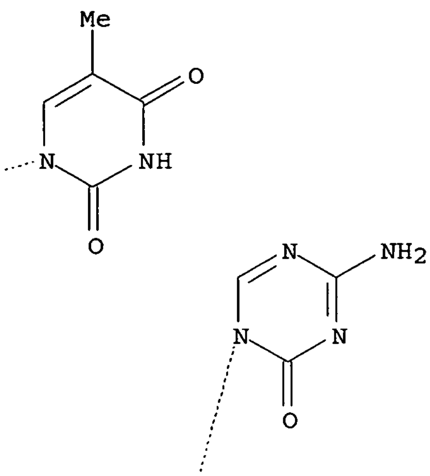

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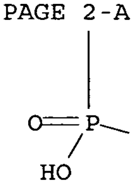

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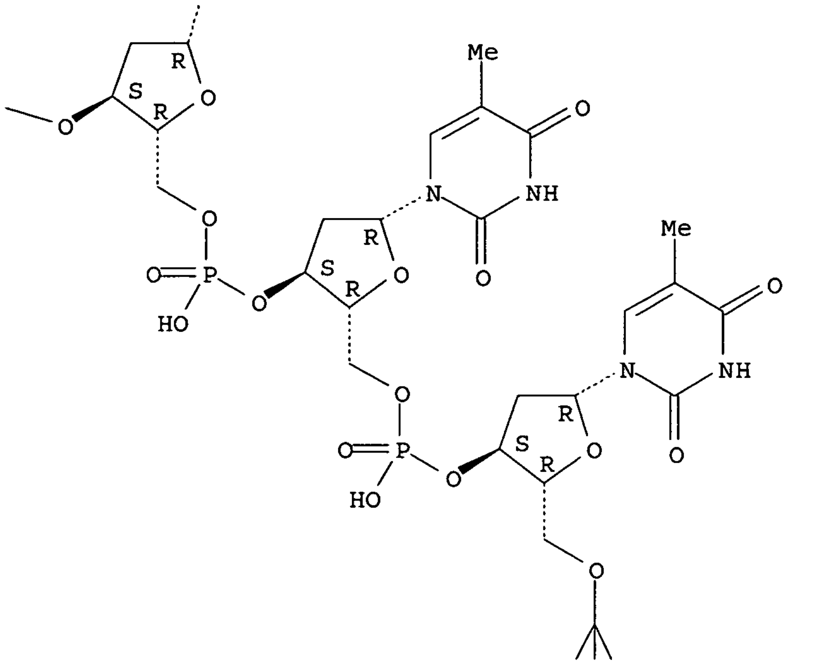

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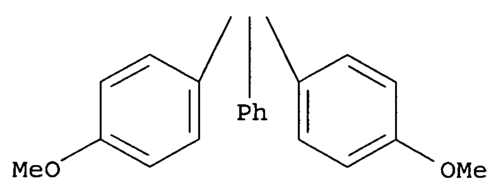
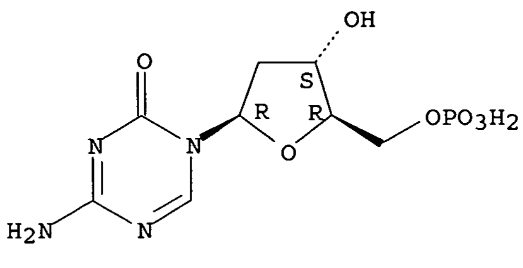


L25 ANSWER 6 OF 37 HCAPLUS
ACCESSION NUMBER: 1995:631152 HCAPLUS
DOCUMENT NUMBER: 123:286481
TITLE: 5-Methylcytosine and 5-azacytosine containing 25mer duplexes: synthesis and investigation of their interaction with HeLa nuclear protein extracts
AUTHOR(S): Padia, Yacoob; Ariatti, Mario; Jones, Peter A.
CORPORATE SOURCE: Dep. of Biochemistry, University of Durban-Westville, Durban, 4000, S. Afr.
SOURCE: Nucleosides & Nucleotides (1995), 14(3-5), 1091-2
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Dekker
DOCUMENT TYPE: Journal
LANGUAGE: English
AB DNA duplexes each containing a single hemimethylated, fully methylated or 2'-deoxy-5-azacytidine (dz5C) hemi-methylated CpG sequence and their interactions with partially purified methylated DNA binding protein and methyltransferase from HeLa cell nuclei are described.
IT **66642-55-5P 72052-96-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

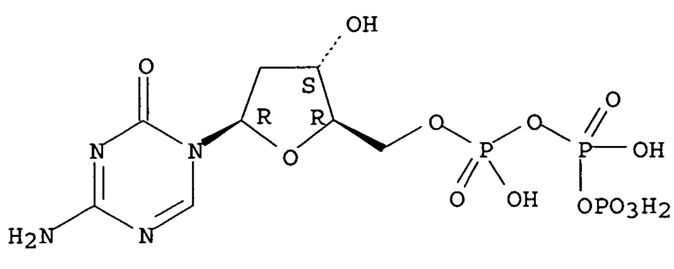
(Reactant or reagent)
(synthesis of methylcytosine and azacytosine containing DNA duplexes and their interaction with methyltransferase from Hela cell nuclei)
RN 66642-55-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 72052-96-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 7 OF 37 HCAPLUS
ACCESSION NUMBER: 1995:550185 HCAPLUS
DOCUMENT NUMBER: 123:25321
TITLE: Biochemical pharmacology and DNA methylation studies of arabinosyl 5-azacytidine and 5,6-dihydro-5-azacytidine in two human leukemia cell lines PER-145 and PER-163
AUTHOR(S): Kees, Ursula R.; Avramis, Vassilios I.
CORPORATE SOURCE: Inst. Child Health Res., Princess Margaret Hosp., West Perth, Australia
SOURCE: Anti-Cancer Drugs (1995), 6(2), 303-10
CODEN: ANTDEV; ISSN: 0959-4973
PUBLISHER: Rapid Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 1-β-D-Arabinofuranosyl-5-azacytosine (ara-AC) and 5,6-dihydro-5-azacytidine (DHAC) are two new antitumor agents under clin. investigations, which exhibit the chemical similarities found in the tumoricidal drug cytosine arabinoside (ara-C) and the nitrogen substitution in the 5 position of the pyrimidine ring found in 5-azacytidine (5-aza-C). The cellular anabolism of ara-AC and DHAC and

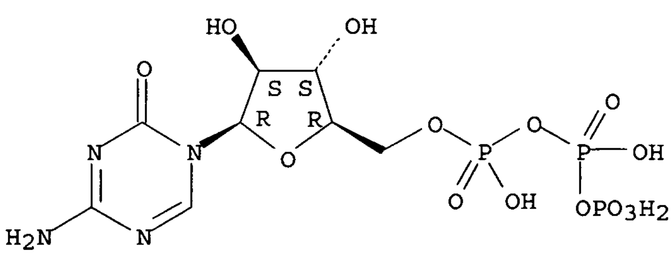
their effect on DNA methylation have been examined in two new human leukemia cell lines, which are sensitive (PER-145) and resistant (PER-163) to ara-C. The triphosphate anabolite of ara-AC, ara-ACTP, was the major cellular anabolite in the cellular exts. of the PER-145 cells, reaching a cellular saturation concentration of 64.1 μM using 25 μM of the drug. Only trace levels of ara-ACTP were detected in the PER-163 cell line, which lacks deoxycytidine kinase, after exposure to a similar concentration Notably, after 1 mM, the ara-ACTP concentration averaged 12 μM. DHAC was anabolized by both cell lines to a similar degree but required much higher nucleoside concns. (100 μM or higher) to achieve similar cellular concns. of its triphosphate, DHACTP. Although the deoxy derivative, DHAdCTP, was detected in both cell lines, it was detected at 1-2 log10 lower concns. than DHACTP. DNA methylation studies showed that DHAC had a profound effect in inducing DNA hypomethylation in both cell lines, with nadir values of 27.3 and 29.2% of control. Ara-AC induced 45% DNA hypomethylation in PER-145 cells, but did not alter the DNA methylation pattern in PER-163 cells, except when they were exposed to 1 mM of the drug for 24 h. These results could be explained by the differential biochem. activation of these drugs in the human leukemia cell lines.

IT **98204-39-8 115723-52-9**, DHACTP **122277-00-3**, DHAdCTP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(biochem. pharmacol. and DNA methylation studies of arabinosyl azacytidine and dihydroazacytidine in sensitive and resistant human leukemia cells)

RN 98204-39-8 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

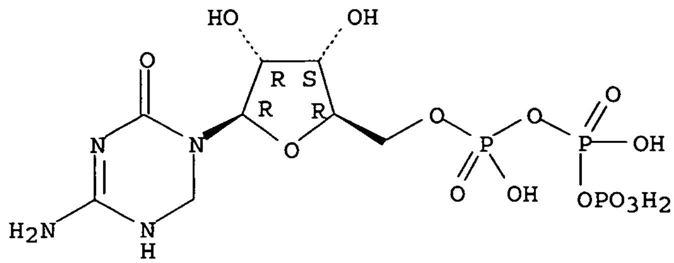
Absolute stereochemistry.



RN 115723-52-9 HCAPLUS

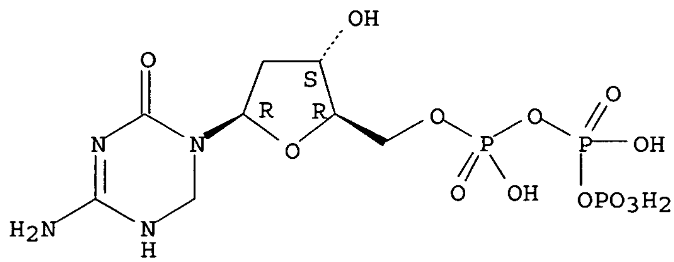
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 122277-00-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]-3,6-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 8 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:199163 HCAPLUS
DOCUMENT NUMBER: 114:199163
TITLE: Cellular metabolism of 1-β-D-arabinofuranosyl-5-azacytosine and incorporation into DNA and RNA of human lymphoid CEM/0 and CEM/dCk(-) cells
AUTHOR(S): Avramis, Vassilios I.; Powell, William C.; Mecum, Robert A.
CORPORATE SOURCE: Sch. Med., Univ. South California, Los Angeles, CA, 90027, USA
SOURCE: Cancer Chemotherapy and Pharmacology (1989), 25(1), 19-24
CODEN: CCPHDZ; ISSN: 0344-5704
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 1-β-D-Arabinosyl-5-azacytosine (ara-AC) is a relatively new antitumor agent under clin. investigation, which has the 2'-β arabinosyl configuration found in the tumoricidal drug ara-C and the nitrogen substitution in the 5-position of the pyrimidine ring found in 5-azacytidine (5-aza-C). The present study examined the cellular metabolism and the effect on DNA methylation of ara-AC in human CCRF/CEM cells sensitive and resistant to ara-C. The triphosphate anabolite of the drug, ara-ACTP, was the major anabolite in the CEM cellular exts., peaking at 50.6 μM 4 h after incubation with IC50 concns. (0.25 μM) of [3H]ara-AC. The mono- and diphosphate anabolites accumulated 10-fold lower cellular concns. than ara-ACTP. The nucleoside triphosphate (NTP) pools and, especially, cellular ATP declined significantly by 9 h after the initiation of drug

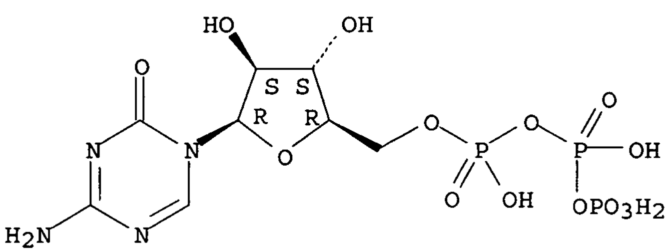
treatment and remained depleted for the 24-h treatment. The drug anabolite was gradually incorporated into both RNA and DNA, peaking in CEM/0 at 3.44 and 0.14 nmol/107 cells, resp. The DNA methylation levels in these cells declined rapidly after treatment with ara-AC, attaining a nadir plateau at 29% of control methylation value. The deoxycytidine kinase (dCk) mutant CEM cell line [CEM/dCk(-)] neither activated ara-AC at appreciable levels nor induced DNA hypomethylation at low concns. (0.25-1 μM). However, the drug was activated at 0.2-1 μM extracellular concns. of ara-AC, probably by an as yet unknown nucleoside kinase at approx. 10% of the amount in CEM/0 cells. Ara-AC appears to mediate its cytotoxic action through the accumulation of its triphosphate anabolite, ara-ACTP, and the subsequent incorporation into nucleic acids. DNA methylation may also contribute to its cytotoxicity.

IT **98204-39-8 106447-37-4 106447-38-5**
RL: FORM (Formation, nonpreparative)
(formation of, as arabinofuranosylazacytosine metabolite, in human lymphoid cells)

RN 98204-39-8 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

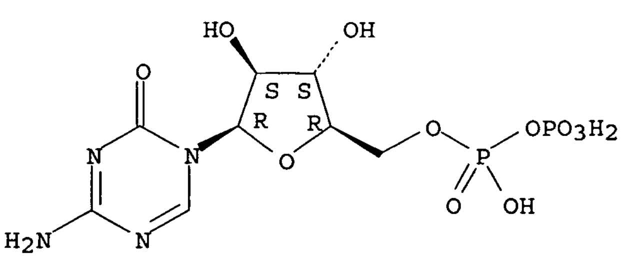
Absolute stereochemistry.



RN 106447-37-4 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy(phosphonooxy)phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

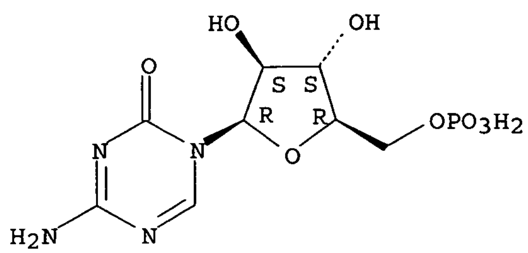
Absolute stereochemistry.



RN 106447-38-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-arabinofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 9 OF 37 HCAPLUS

ACCESSION NUMBER: 1989:554311 HCAPLUS
DOCUMENT NUMBER: 111:154311
TITLE: Automated solid phase synthesis of DNA containing 5-azacytosine
INVENTOR(S): Marques, V.; Goddard, A. J.
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: U. S. Pat. Appl., 22 pp. Avail. NTIS Order No. PAT-APPL-6-178 153.
CODEN: XAXXAV
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 178153	A0	19880915	US 1988-178153		19880406
US 5324831	A	19940628			
CA 1330960	A1	19940726	CA 1989-595701		19890405
WO 8909779	A1	19891019	WO 1989-US1395		19890406
W: AU, JP					
AU 8933681	A1	19891103	AU 1989-33681		19890406
AU 625295	B2	19920709			
JP 03502577	T2	19910613	JP 1989-504376		19890406
JP 06092435	B4	19941116			
PRIORITY APPLN. INFO.:			US 1988-178153	A	19880406
			WO 1989-US1395	A	19890406

AB The modified base 5-azacytosine is incorporated into DNA, e.g. by automated solid phase synthesis, though use of the protected 5,6-dihydro-5-azacytidine phosphoramidite (I). Thus, 5-azacytosine deoxyribose was reacted with 1,3-dichlor-1,1,3,3-tetraisopropyldisiloxane, then reduced with borohydride to prepare the (3' and 5' hydroxyl) protected, 5,6-dihydro analog. After reaction of the exocyclic amino group with isobutyryl chloride, the triazine ring was completely protected by introduction of the bis (isobutyryloxy)ethylene group. I was prepared by dimethyoxytritylation of the 5' hydroxyl followed by phosphitylation of the 3' hydroxyl. I was incorporated into decamers using an automated DNA synthesizer. After deprotection, the 5,6-dihydro-5-azacytosine was converted to 5-azacytosine using trimethylsilyl peroxide.

IT **117399-29-8P 117399-79-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by automated solid-phase synthesis, protected dihydroazacytidine phosphoramidite in)

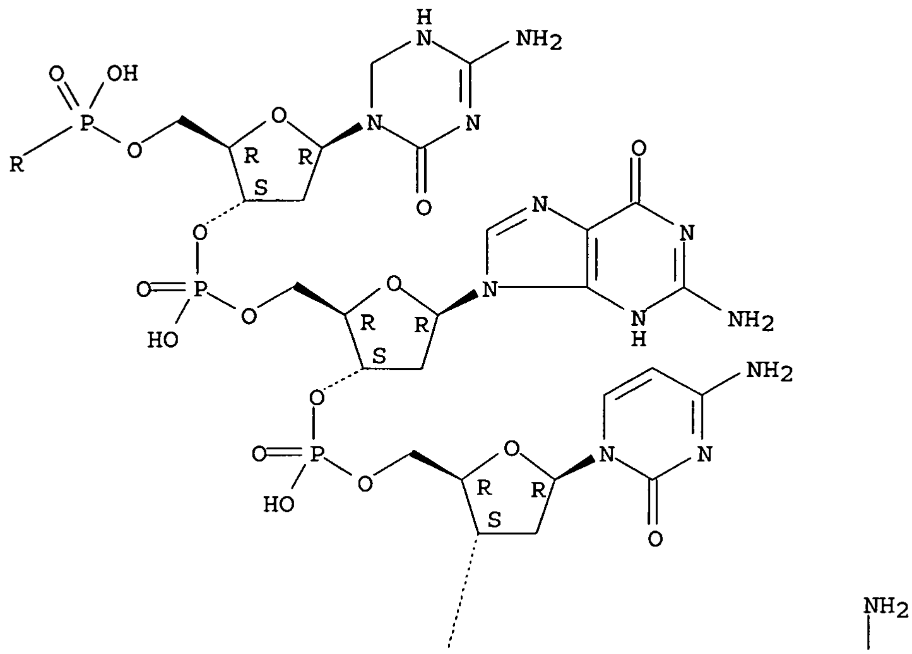
RN 117399-29-8 HCAPLUS

CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-

(3'→5')-2'-deoxy-5,6-dihydro-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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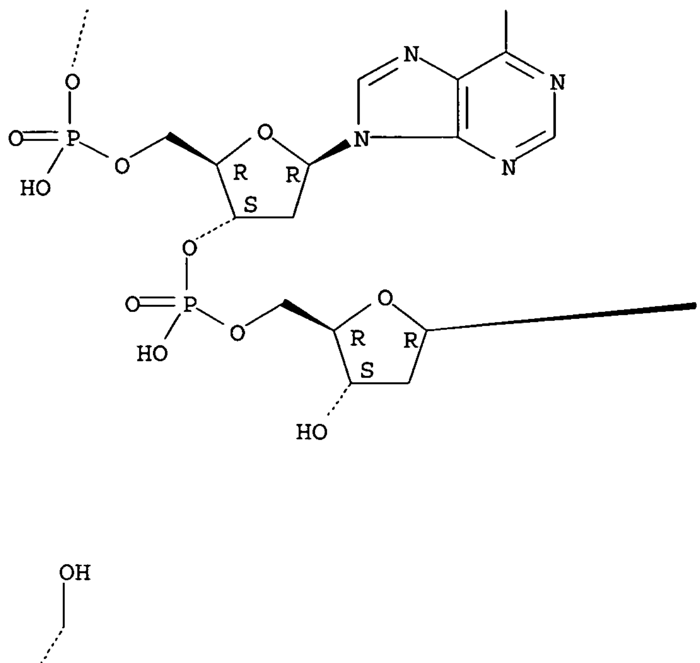

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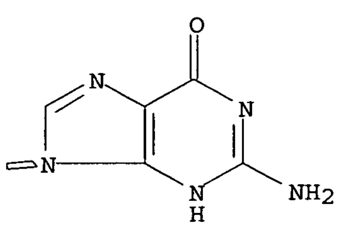

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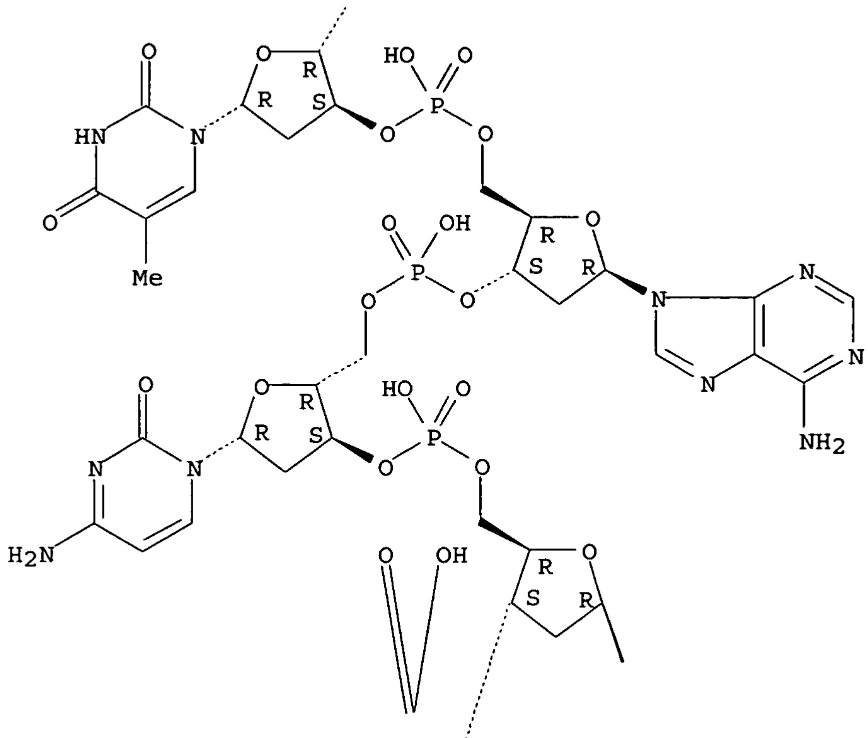
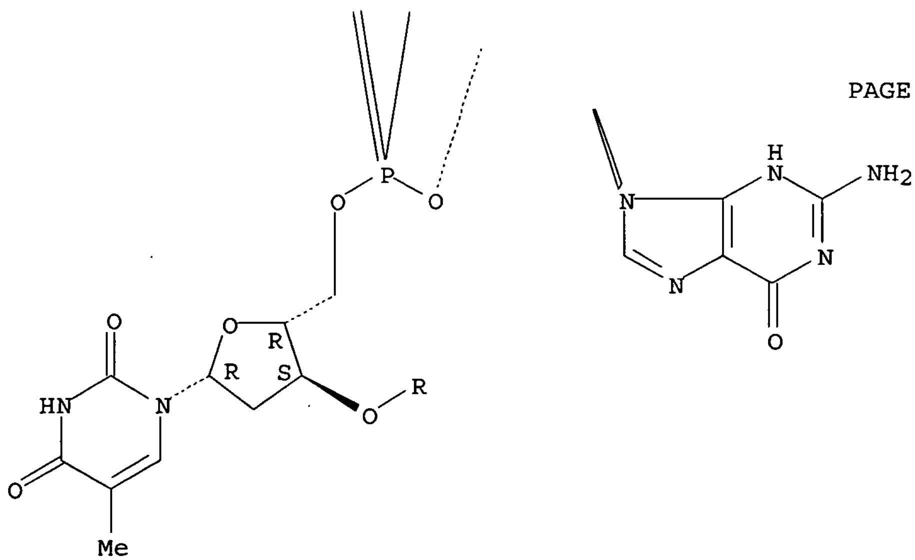


PAGE 4-A

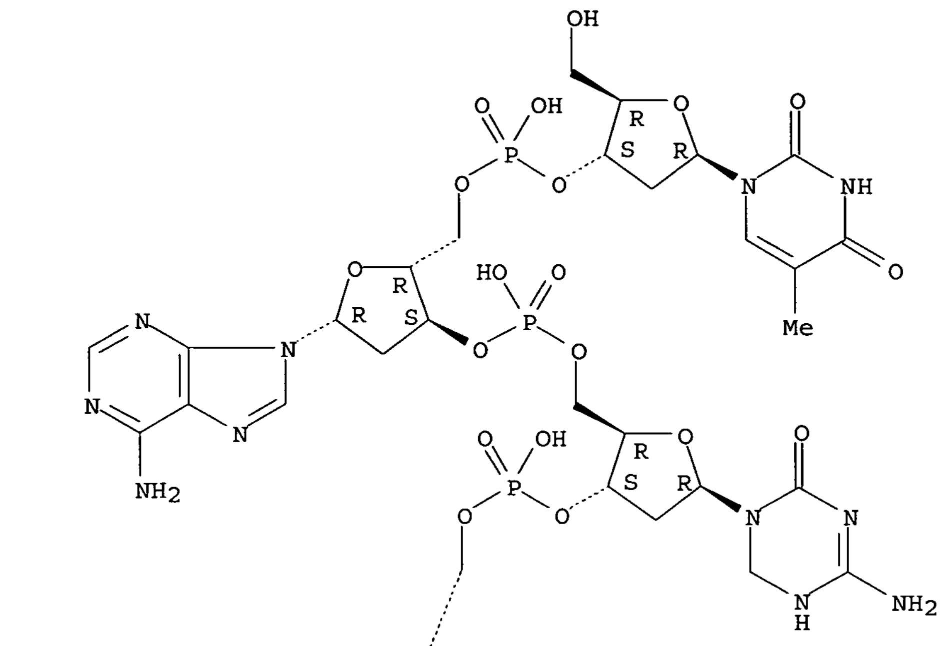


RN 117399-79-8 HCAPLUS

CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy-5,6-dihydro-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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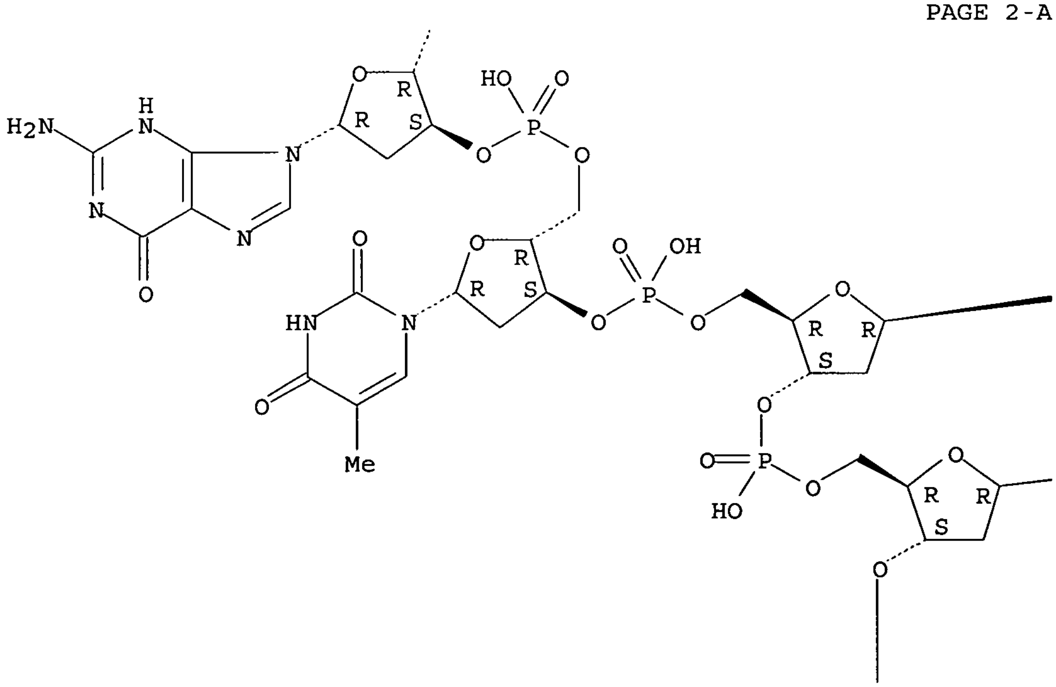
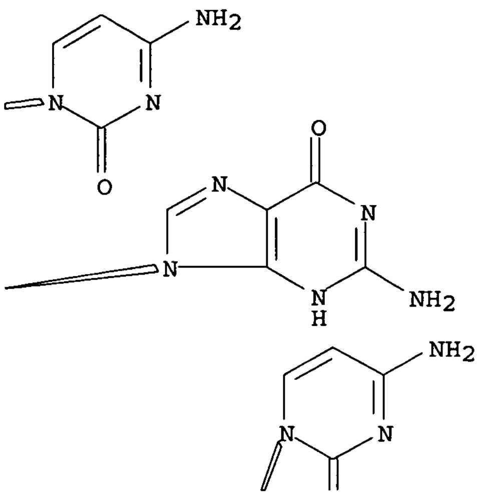


PAGE 2-B



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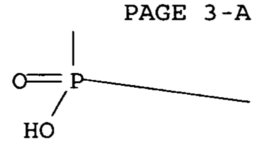

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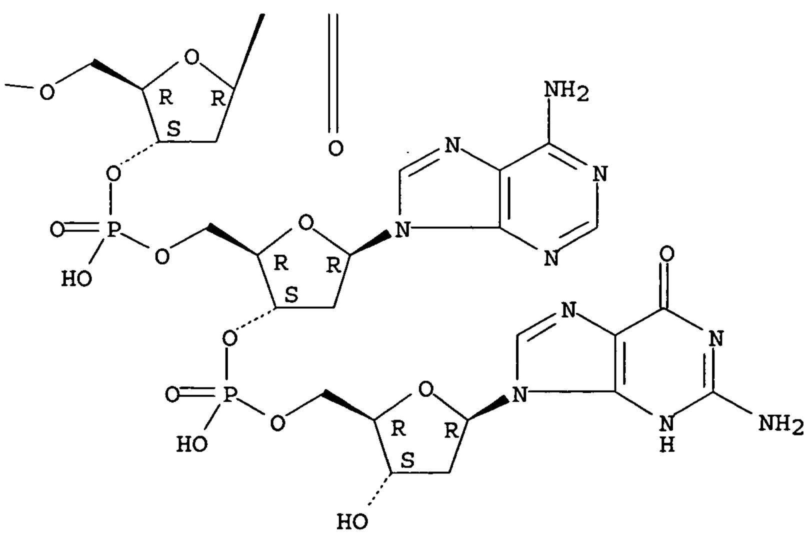


L25 ANSWER 10 OF 37 HCAPLUS

ACCESSION NUMBER: 1989:489722 HCAPLUS

DOCUMENT NUMBER: 111:89722

TITLE: Cellular metabolism of 5,6-dihydro-5-azacytidine and its incorporation into DNA and RNA of human lymphoid cells CEM/O and CEM/dCk(-)

AUTHOR(S): Avramis, Vassilios I.; Powell, William C.; Mecum, Robert A.

CORPORATE SOURCE: Sch. Med., Univ. South. California, Los Angeles, CA, 90027, USA

SOURCE: Cancer Chemotherapy and Pharmacology (1989), 24(3), 155-60

CODEN: CCPHDZ; ISSN: 0344-5704

DOCUMENT TYPE: Journal

LANGUAGE: English

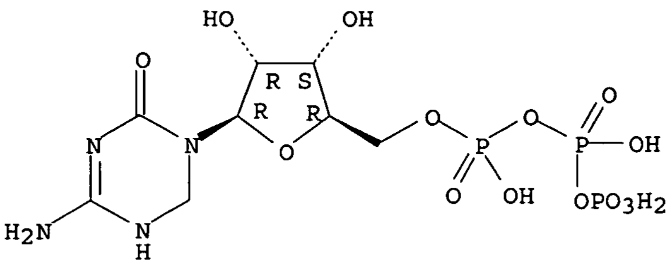
AB 5,6-Dihydro-5-azacytidine (DHAC) is a hydrolytically stable analog of 5-azacytidine (5-aza-C) that has antileukemic activity against exptl. leukemias and, like 5-aza-C, causes DNA hypomethylation. The authors report the cellular metabolism of DHAC and its incorporation into nucleic acids in the CCRF/CEM/O and deoxycytidine kinase mutant CCRF/CEM/dCk(-) human lymphoid cell lines. The major anabolite of [3H]DHAC, [3H]DHACTP, peaked at 110.3 μM in CEM/O and at 96.3 μM in CEM/dCk(-) cells at 9 and 12 h, resp. The intracellular concns. of the deoxyribonucleoside triphosphate, [3H]DHAdCTP, peaked at 13.5 μM at 4 h in CEM/O and at 80.8 μM at 12 h, a 6-fold greater cellular concentration, in the dCk mutant cell line. The amount of DHAC anabolites incorporated into CEM/O nucleic acids reached a plateau in RNA at 552.6 pmol/107 cells and in DNA at 64.55 pmol/107 cells. In CEM/dCk(-) cells, DHAC anabolites reached a plateau in RNA and DNA at 4,256.3 and 395.5 pmol/107 cells, resp. Thus, with equitoxic treatments of DHAC, the incorporation of its analog anabolites into RNA and DNA was 8- and 6-fold greater in CEM/dCk(-) cells. DNA methylation levels were depressed equally despite a 6-fold greater incorporation of the analog in DNA in the CEM/dCk(-) cells, indicating that hypomethylation may be saturated after DHAC treatment. The DNA methylation levels reached a nadir of 0.19% and 0.20% methyl-C (percentage of methylation) in the two cell lines at 6 and 12 h after the beginning of drug treatment and remained relatively constant for the duration of the 24-h treatment. A curvilinear relationship was obtained between the DNA methylation levels in both cell lines and the amts. of DHAC anabolite incorporated into DNA.

IT **115723-52-9**, DHACTP **122277-00-3**, DHAdCTP
RL: FORM (Formation, nonpreparative)
(formation of, as dihydroazacytidine metabolite in leukemia cells of humans, nucleic acid formation and methylation in relation to)

RN 115723-52-9 HCAPLUS

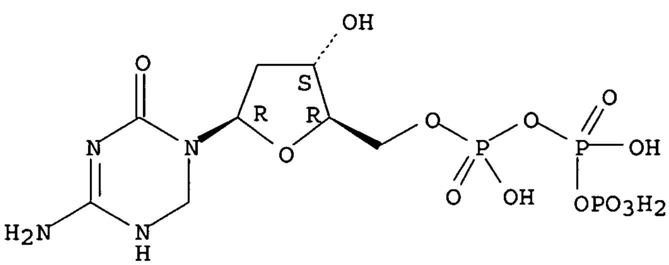
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 122277-00-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-
[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-
pentofuranosyl]-3,6-dihydro- (9CI) (CA INDEX NAME)

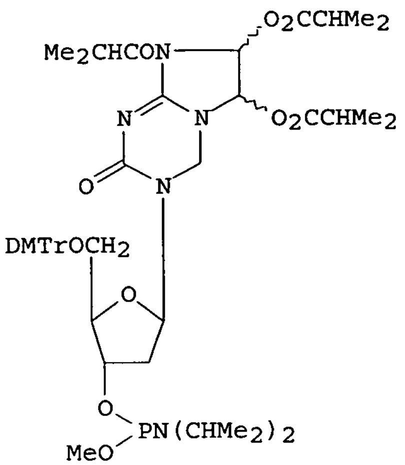
Absolute stereochemistry.



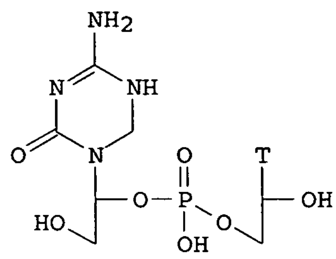
L25 ANSWER 11 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	1989:57997 HCAPLUS
DOCUMENT NUMBER:	110:57997
TITLE:	Synthesis of a phosphoramidite of 2'-deoxy-5,6-dihydro-5-azacytidine. Its potential application in the synthesis of DNA containing dihydro-5-aza and 5-azacytosine bases
AUTHOR(S):	Goddard, Amanda J.; Marquez, Victor E.
CORPORATE SOURCE:	Lab. Med. Chem., Natl. Cancer Inst., Bethesda, MD, 20892, USA
SOURCE:	Tetrahedron Letters (1988), 29(15), 1767-70 CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE:	Journal
LANGUAGE:	English
OTHER SOURCE(S):	CASREACT 110:57997

GI



I



II

AB A novel phosphoramidite I (DMTr = 4,4'-dimethoxytrityl) was synthesized and shown to be an efficient coupling reagent for the synthesis of oligonucleotide fragments containing the modified base 5,6-dihydro-5-azacytosine. Dihydro-5-azacytosine/thymidine dimer II was prepared Oxidation of the dihydrotriazine ring in II to the aromatic base was partially successful. Two decamers containing 5,6-dihydro-5-azacytosine base were prepared

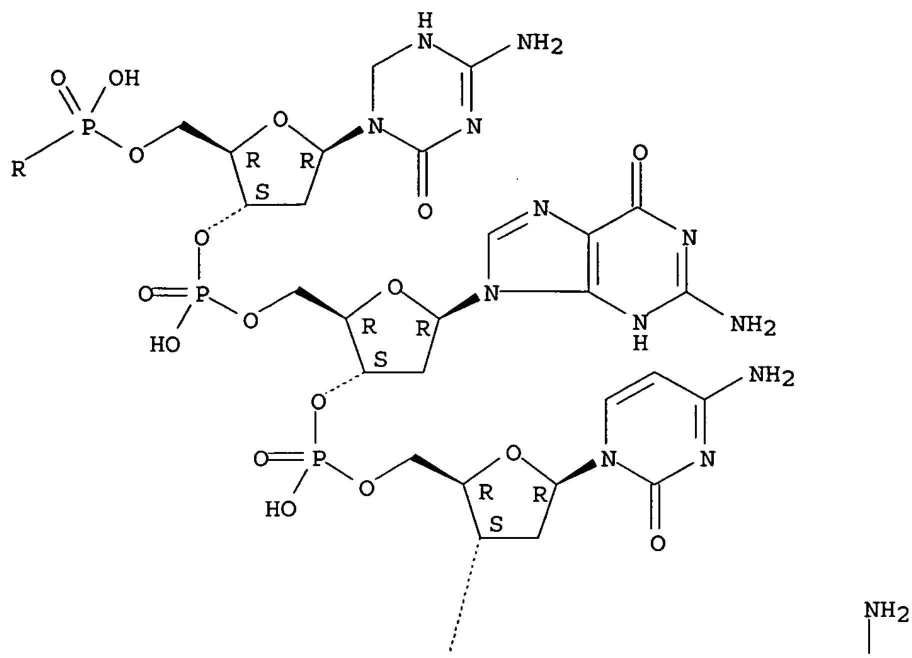
IT **117399-29-8P 117399-79-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 117399-29-8 HCAPLUS

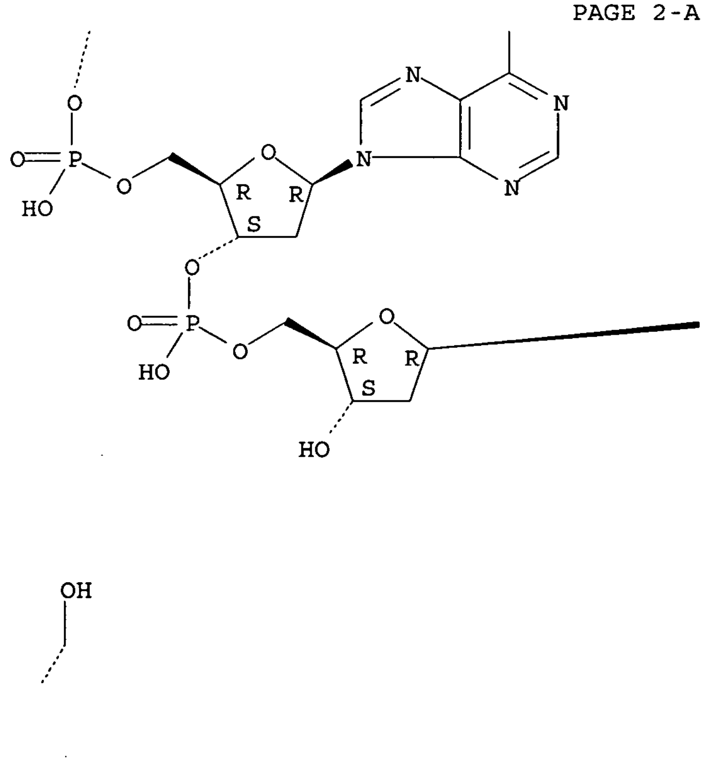
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy-5,6-dihydro-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

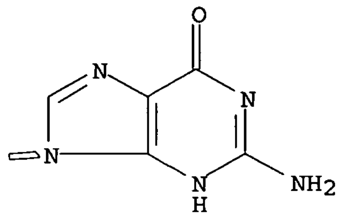
PAGE 1-A



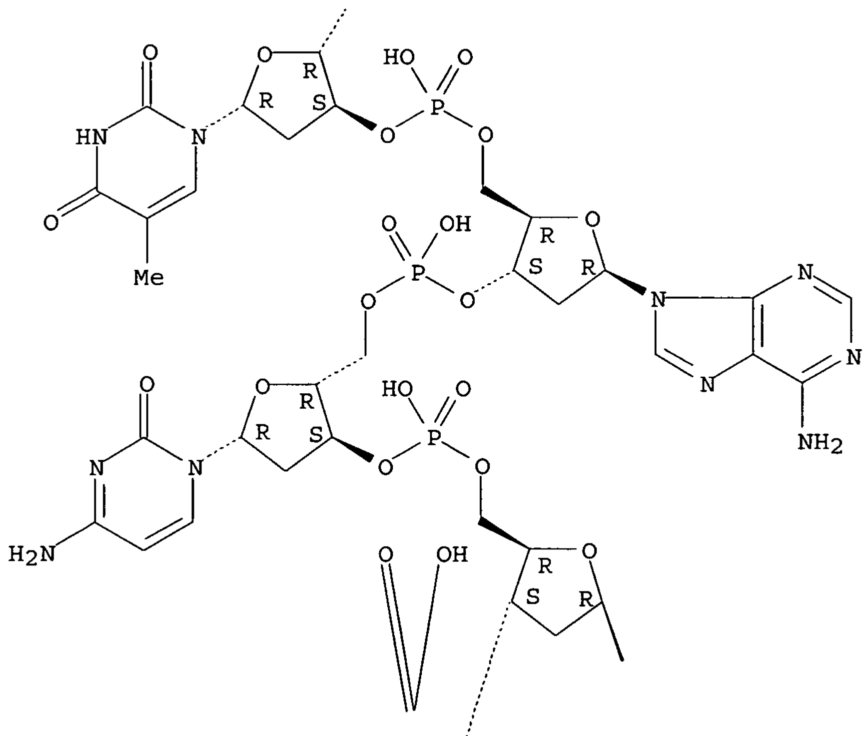
PAGE 2-A



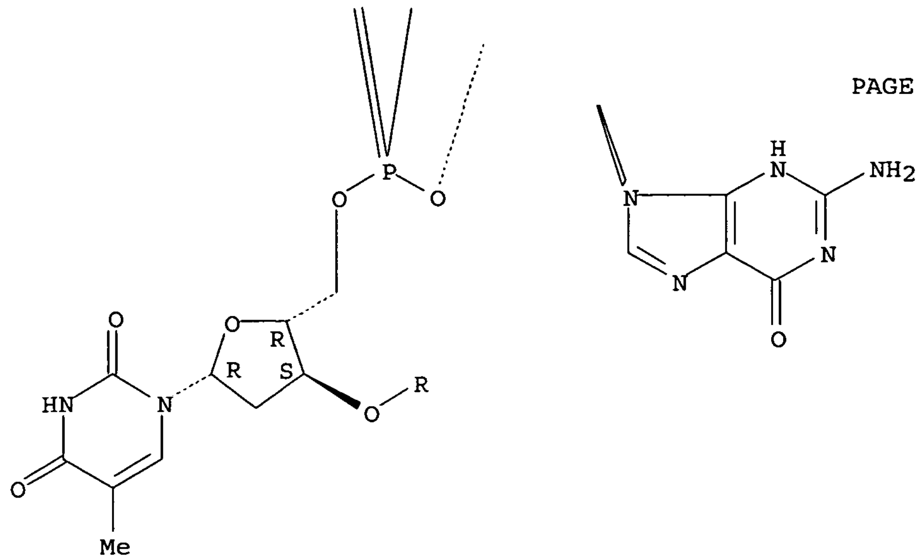
PAGE 2-B



PAGE 3-A



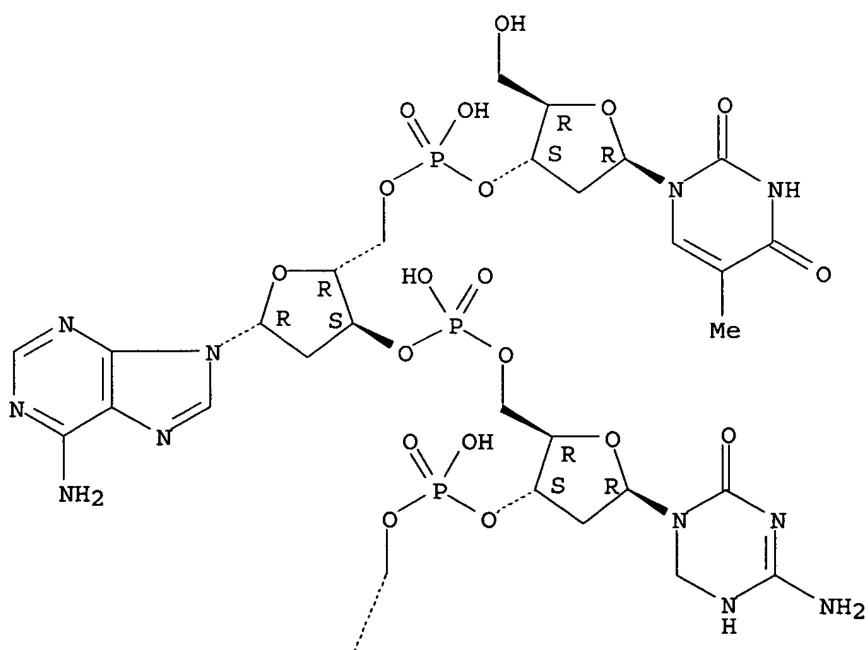
PAGE 4-A



RN 117399-79-8 HCAPLUS
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy-5,6-dihydro-5-azacytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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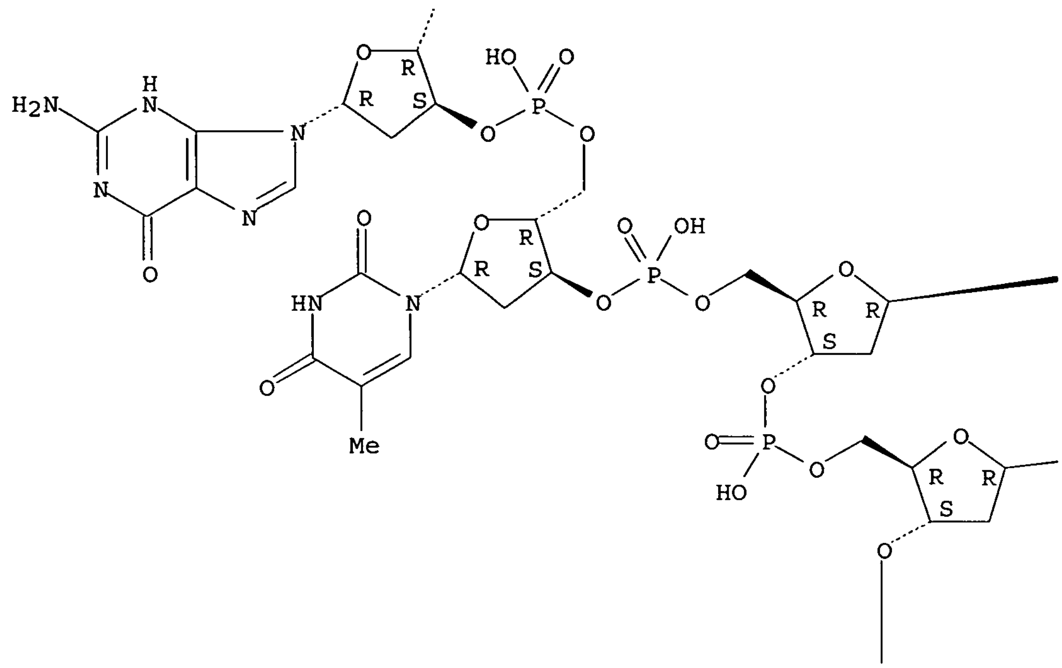
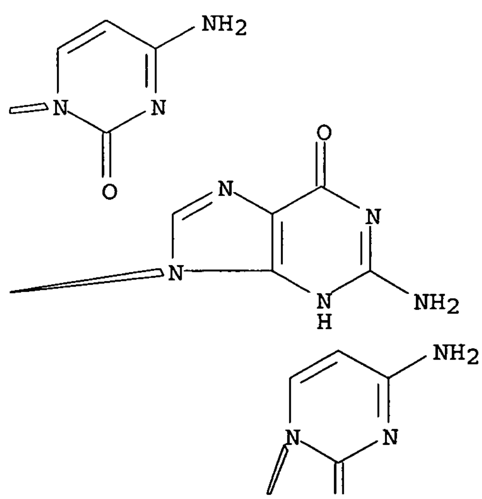
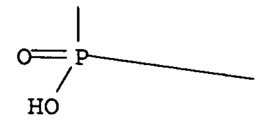


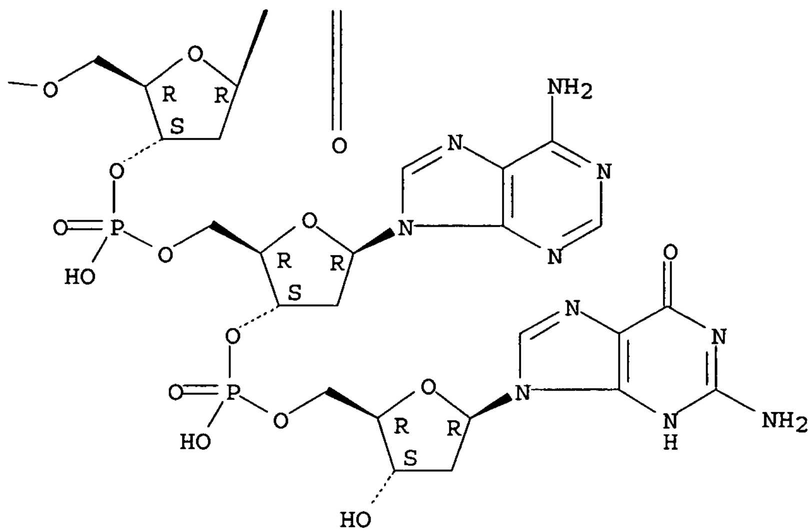
PAGE 2-B



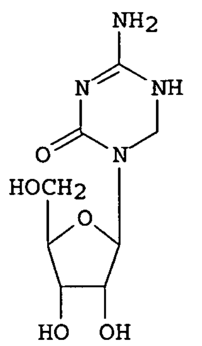
PAGE 3-A



PAGE 3-B



L25 ANSWER 12 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:485813 HCAPLUS
DOCUMENT NUMBER: 109:85813
TITLE: Biochemical pharmacology of 5,6-dihydro-5-azacytidine (DHAC) and DNA hypomethylation in tumor (L1210)-bearing mice
AUTHOR(S): Powell, William C.; Avramis, Vassilios I.
CORPORATE SOURCE: Sch. Med., Univ. Southern California, Los Angeles, CA, 90027, USA
SOURCE: Cancer Chemotherapy and Pharmacology (1988), 21(2), 117-21
CODEN: CCPHDZ; ISSN: 0344-5704
DOCUMENT TYPE: Journal
LANGUAGE: English
GI


I

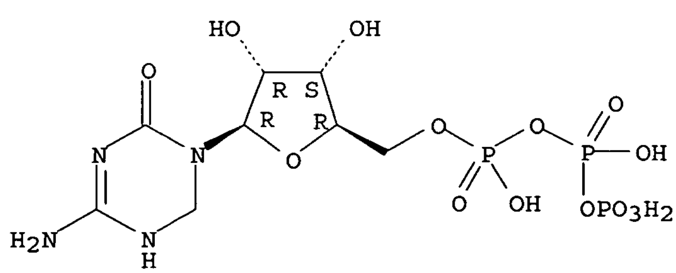
AB The biochem. pharmacol. of the antileukemic drug DHAC (I) was studied in tumor-bearing mice. At LD10 of DHAC, the peak plasma concentration was 317 μM and DHAC was eliminated biexponentially with a half-life α (t1/2α) = 1.03 h and t1/2β = 5 h. By 4 h, an unidentified metabolite of [3H]DHAC peaked and was eliminated biexponentially with t1/2α = 1.06 h and t1/2β = 10.6 h. [3H]DHAC-5'-triphosphate was the major anabolite in the L1210/0 cells, and was also eliminated biexponentially with t1/2α = 4.3 h and t1/2β = 12.2 h. An unknown anabolite of [3H]DHAC, which eluted from an HPLC column 5 min after [3H]DHAC triphosphate between UTP and ATP, peaked at 3 h and could be possibly the deoxy derivative [3H]DHAdCTP. A tissue distribution study revealed that the liver, L1210/0 cells, and lung accumulate the most radioactivity per g of wet tissue. Methylation studies at LD10 of [3H]DHAC showed 25.06% hypomethylation of DNA in L1210/0 cells and 46.32% hypomethylation in a deoxycytidine kinase mutant cell line L1210/dCK(-), compared with their resp. controls.

IT **115723-52-9**
RL: BIOL (Biological study)
(as dihydroazacytidine metabolite, leukemia inhibition in relation to)

RN 115723-52-9 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 13 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1987:628626 HCAPLUS

DOCUMENT NUMBER: 107:228626

TITLE: Sequence-specific effects of ara-5-aza-CTP and ara-CTP on DNA synthesis by purified human DNA polymerases in vitro: visualization of chain elongation on a defined

template

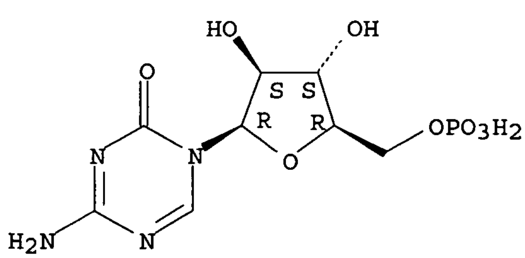
AUTHOR(S): Townsend, Alan J.; Cheng, Yung Chi
CORPORATE SOURCE: Pharmacol. Dep., Univ. North Carolina, Chapel Hill, NC, 27514, USA

SOURCE: Molecular Pharmacology (1987), 32(3), 330-9
CODEN: MOPMA3; ISSN: 0026-895X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 1-β-D-Arabinofuranosyl-5-aza-cytosine (ara-5-aza-Cyd) is an analog of ara-C, which resembles ara-C in anabolic metabolism, incorporation into DNA, and inhibition of DNA replication. Human T-lymphoblastic cells (Molt-4) incorporate 3-5-fold more ara-5-aza-Cyd than ara-C into DNA during 5-8 h exposure. Although ara-5-aza-Cyd and its triphosphate metabolite are unstable in aqueous solution, the aza-analog was much more stable in solution when incorporated into native DNA isolated from Molt-4 cells. By using gapped duplex DNA as a substrate for purified human DNA polymerases α and β, inhibition of [3H]-dCTP incorporation by ara-5-aza-CTP and ara-CTP was competitive, with Ki values for α of 11 and 1.5 μM, resp. Ki Values for polymerase β were 39 and 7.6 μM, resp. A DNA elongation assay was adapted from DNA sequencing technol., using singly primed bacteriophage M13mp19 or M13mp9 (+)-DNA. Elongation of 5'-[32P]-labeled primer by polymerase α was slowed considerably by incorporation of one ara-CMP and to a lesser extent after incorporation of one ara-5-aza-CMP. Neither analog significantly affected elongation by polymerase β after a single incorporation. However, neither polymerase alone could appreciably extend the growing chain if 2 consecutive ara-5-aza-CMP or ara-CMP analogs were incorporated. Thus, if similar mechanisms are operant in intact cells, the greater incorporation of ara-5-aza-Cyd than ara-C into DNA may be due to a more facile elongation of the nascent DNA strand by polymerase α after incorporation of a single analog. The effect in vitro of incorporation of either analog on DNA chain elongation is widely variable, depending on the identity of the polymerase involved and the sequence of the DNA template being copied.

IT **106447-38-5**
RL: BIOL (Biological study)
(DNA chain elongation response to, ara-C and arabinofuranosylazacytosine cytotoxicity in relation to)
RN 106447-38-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-arabinofuranosyl)- (9CI) (CA INDEX NAME)

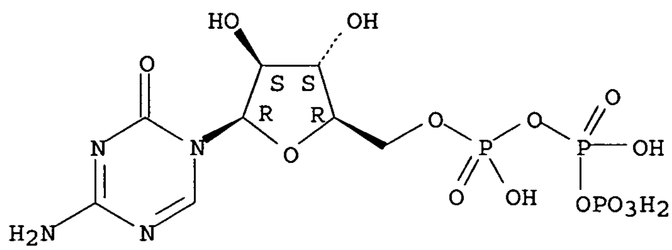
Absolute stereochemistry.



IT **98204-39-8**
RL: BIOL (Biological study)
(DNA formation and DNA polymerases response to, in human lymphoblastic cells)

RN 98204-39-8 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 14 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:168640 HCAPLUS
DOCUMENT NUMBER: 106:168640
TITLE: Inhibition of DNA primase by nucleoside triphosphates and their arabinofuranosyl analogs
AUTHOR(S): Parker, William B.; Cheng, Yung Chi
CORPORATE SOURCE: Dep. Pharmacol., Univ. North Carolina, Chapel Hill, NC, 27514, USA
SOURCE: Molecular Pharmacology (1987), 31(2), 146-51
CODEN: MOPMA3; ISSN: 0026-895X
DOCUMENT TYPE: Journal
LANGUAGE: English

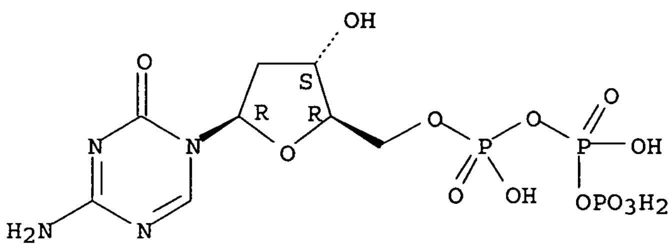
AB DNA primase [64885-96-7] produces an RNA oligomer of approx. 10 bases, which is required by DNA polymerase α (EC 2.7.7.7) for the initiation of DNA synthesis. DNA primase was partially purified from acute lymphocytic leukemia cells from patients by using several chromatog. columns. Poly(dT) and poly(dC), but not poly(dA) or poly(dG), were good templates for ribonucleoside triphosphate (rNTP)-dependent DNA synthesis (i.e., DNA primase activity), and they were used in the study of the effect of natural and arabinofuranosyl nucleoside triphosphates on DNA primase activity. The Km for GTP [86-01-1] in the poly(dC) primase assay was .apprx.175 μM. All noncomplementary natural rNTPs and deoxyribonucleoside triphosphates (dNTPs) inhibited poly(dC) primase activity to a similar extent (Ki values of ATP [56-65-5] and CTP [65-47-4] were 610 and 517 μM, resp.). 1-β-D-Arabinofuranosylcytosine 5'-triphosphate (araCTP) [13191-15-6] and 9-β-D-arabinofuranosyladenine 5'-triphosphate (araATP) [3714-60-1] were more potent inhibitors of poly(dC) primase activity than were CTP and ATP (Ki values were .apprx.125 μM). AraCTP, araATP, CTP, and ATP inhibited DNA primase activity in a manner competitive with GTP. The concentration required to inhibit poly(dC) DNA primase activity by 50% was determined
for a number of arabinofuranosyl nucleoside triphosphate analogs, and the relative potency of inhibition of DNA primase activity was as follows: rNTP = dNTP = 5-aza-dCTP [**72052-96-1**] < ara-5-azaCTP [**98204-39-8**] = araTTP [66097-68-5] = araATP = araCTP < 2-fluoro-araATP [74832-57-8] = 2'-azido-2'-deoxy-araCTP [59652-91-4] < 2'-fluoro-araTTP [79551-89-6] = 2'-fluoro-5-iodo-araCTP [79570-63-1] = 2'-fluoro-5-methyl-araCTP [79570-62-0]. In the poly(dT) primase assay ATP did not follow classic Michaelis-Menten kinetics (ATP exhibited pos. cooperativity with a Hill coefficient of 2.0). However, this assay was very sensitive to araCTP (apparent Ki of 25 μM). In summary, these expts.

suggested that DNA primase is controlled by the levels of ribonucleoside triphosphates, and that the perturbation of these pools by any agent could lead to the inhibition of DNA primase and thereby inhibit DNA synthesis. Furthermore, aranucleoside triphosphate analogs directly inhibited DNA primase, and it is possible that this effect may contribute to the cytotoxicity of these compds.

IT **72052-96-1**, 5-Aza-dCTP **98204-39-8**
RL: BIOL (Biological study)
(DNA primase inhibition by, cytotoxic mechanism in relation to)

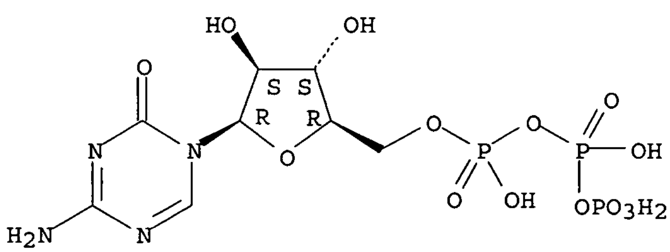
RN 72052-96-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 98204-39-8 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 15 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	1987:95689 HCAPLUS
DOCUMENT NUMBER:	106:95689
TITLE:	5-Aza-2'-deoxycytidine synergistic action with thymidine on leukemic cells and interaction of 5-AZA-dCMP with dCMP deaminase
AUTHOR(S):	Momparler, R. L.; Rossi, M.; Bouchard, J.; Bartolucci, S.; Momparler, L. F.; Raia, C. A.; Nucci, R.; Vaccaro, C.; Sepe, S.
CORPORATE SOURCE:	Dep. Pharmacol., Univ. Montreal, Montreal, QC, Can.
SOURCE:	Advances in Experimental Medicine and Biology (1986), 195B(Purine Pyrimidine Metab. Man 5, Pt. B), 157-63 CODEN: AEMBAP; ISSN: 0065-2598
DOCUMENT TYPE:	Journal
LANGUAGE:	English

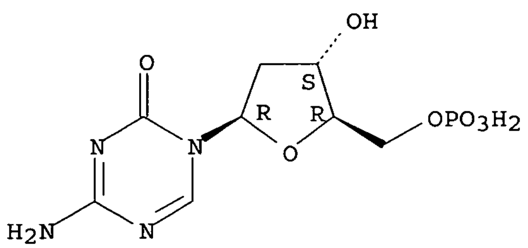
AB A synergistic antineoplastic effect between 5-aza-2'-deoxycytidine (5-AZA-CdR) [2353-33-5] and thymidine (dTR) [50-89-5] was observed in human and murine leukemic cells in culture. A possible mechanism by which low concns. of dTR can increase the antileukemic action of 5-Aza-CdR appears to be due to a deoxyTTP inhibition of the deamination of 5-aza-2-deoxy CMP [**66642-55-5**] by deoxy CMP deaminase [9026-92-0]. Both deoxy CTP and 5-aza-deoxy CTP completely reversed the inhibitory effect of deoxy TTP on deoxy CMP deaminase.

IT **66642-55-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(deamination of, deoxyCMP deaminase inhibition of, synergistic antitumor activity of azadeoxycytidine and thymidine in relation to)

RN 66642-55-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

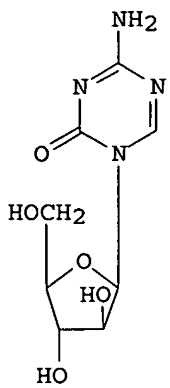
Absolute stereochemistry.



L25 ANSWER 16 OF 37 HCAPLUS

ACCESSION NUMBER:	1987:60864 HCAPLUS
DOCUMENT NUMBER:	106:60864
TITLE:	Inhibition of DNA-dependent DNA polymerase α by arabinosyl-5-azacytosine and its metabolic transformation in L1210 mouse leukemic cells
AUTHOR(S):	Vesely, Jiri
CORPORATE SOURCE:	Inst. Org. Chem. Biochem., Czech. Acad. Sci., Prague, 166 10, Czech.
SOURCE:	Collection of Czechoslovak Chemical Communications (1986), 51(10), 2285-90 CODEN: CCCCAK; ISSN: 0366-547X
DOCUMENT TYPE:	Journal
LANGUAGE:	English

GI



I

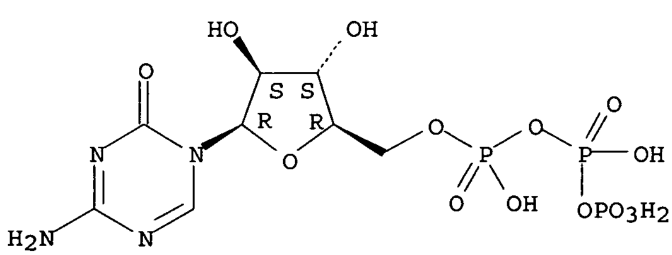
AB 1-β-D-Arabinosyl-5-azacytosine (I) [65886-71-7] is phosphorylated by the L1210 mouse leukemic cells in vivo as well as by the cell-free extract in the presence of ATP. The drug inhibits in vitro the activity of DNA-dependent DNA polymerase α from L1210 cells in a dose-dependent manner but to a lesser degree than arabinosylcytosine. When administered in vivo, it depresses the activity of DNA polymerase to about the same extent as arabinosylcytosine. The Km for the phosphorylation of arabinosyl-5-azacytosine is 46% higher than the corresponding value for arabinosylcytosine.

IT **98204-39-8 106447-37-4 106447-38-5**
RL: BIOL (Biological study)
(as arabinosylazacytosine metabolite, in leukemia)

RN 98204-39-8 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

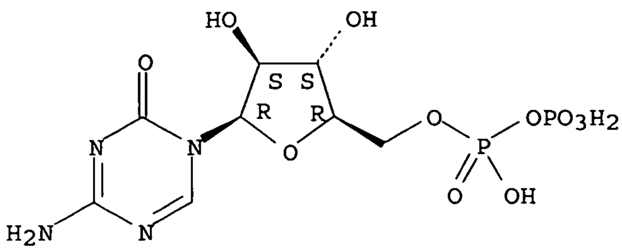
Absolute stereochemistry.



RN 106447-37-4 HCAPLUS

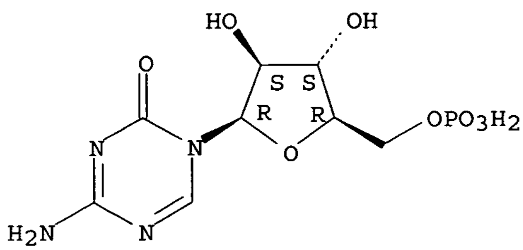
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy(phosphonooxy)phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 106447-38-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-arabinofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



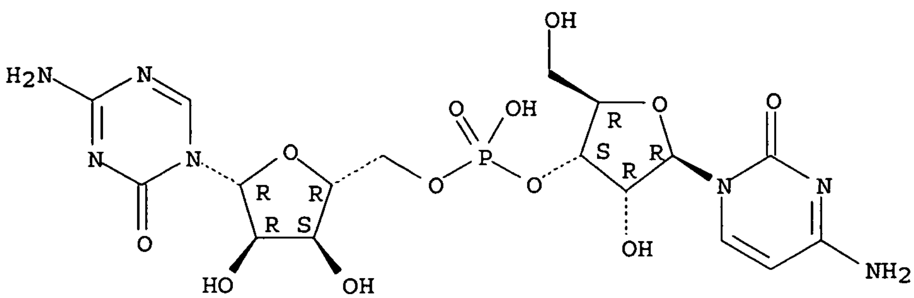
L25 ANSWER 17 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:402613 HCAPLUS
DOCUMENT NUMBER: 105:2613
TITLE: Nucleoside antimetabolites in the synthesis of the internucleotide bond catalyzed by ribonucleases
AUTHOR(S): Zhenodarova, S. M.; Soboleva, I. A.; Khabarova, M. I.
CORPORATE SOURCE: Inst. Biol. Fiz., Pushchino, USSR
SOURCE: Nukleazy: Biol. Rol Prakt. Ispol'z. (1985), 25-8. Editor(s): Berdyshev, G. D.; Khursin, N. E. Naukova Dumka: Kiev, USSR.
CODEN: 54IIAL
DOCUMENT TYPE: Conference
LANGUAGE: Russian

AB The effect of structure on the ability of analogs of natural nucleosides (5-substituted derivs. of 2'-deoxyuridine and 2'-deoxycytidine, 1-β-arabinosylcytidine, and virazole) to serve as acceptors in RNase-catalyzed phosphate bond formation with cAMP or cGMP was investigated. No correlation was found between ability of these compds. to serve as substrates in the reaction and the changes in electron d. or ionization consts. of the bases caused by substitution of the H atom in the 5 position with a Me group or halides, even though there were indications that these factors affected the interaction of these compds. with the enzyme. Apparently, the differences in the ability of these compds. to act as substrates in the RNase-catalyzed synthetic reaction are due mainly to steric effects.

IT **65676-38-2P 65676-44-0P 65676-49-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, RNase as catalyst for)

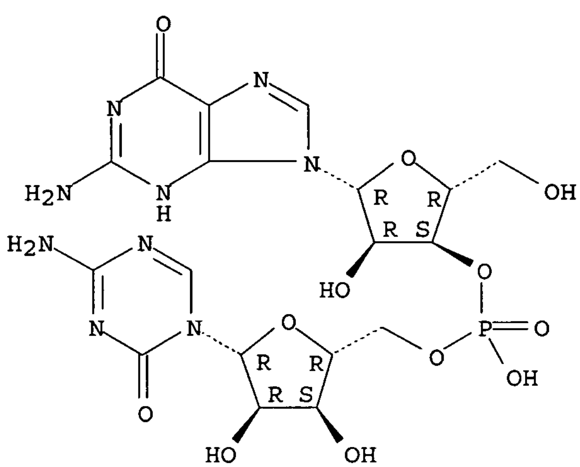
RN 65676-38-2 HCAPLUS
CN 5-Azacytidine, cytidylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



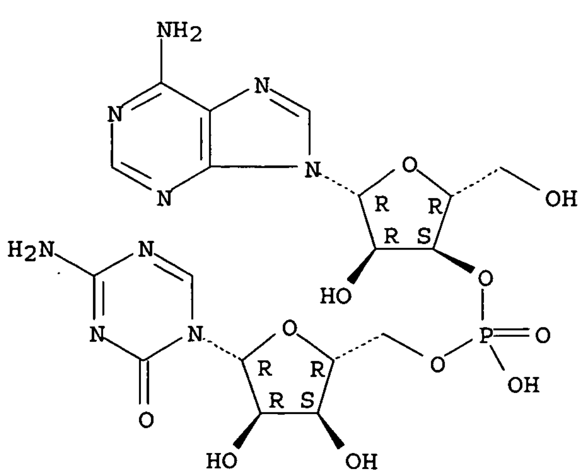
RN 65676-44-0 HCAPLUS
CN 5-Azacytidine, guanylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



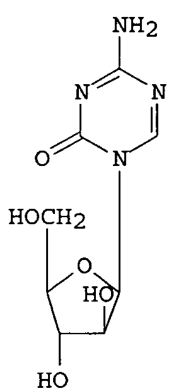
RN 65676-49-5 HCAPLUS
CN 5-Azacytidine, adenylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 18 OF 37 HCAPLUS

ACCESSION NUMBER: 1985:534649 HCAPLUS
DOCUMENT NUMBER: 103:134649
TITLE: Metabolism of 1-β-D-arabinofuranoysl-5-azacytosine and incorporation into DNA of human T-lymphoblastic cells (Molt-4)
AUTHOR(S): Townsend, Alan; Leclerc, Jean Marie; Dutschman, Ginger; Cooney, David; Cheng, Yung Chi
CORPORATE SOURCE: Dep. Pharmacol., Univ. North Carolina, Chapel Hill, NC, 27514, USA
SOURCE: Cancer Research (1985), 45(8), 3522-8
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB 1-β-D-Arabinofuranosyl-5-azacytosine (ara-5-aza-Cyd)(I) [65886-71-7] had potent cytotoxicity against human T-type lymphoblastic cells in culture. When Molt-4 cells were exposed to ara-5-aza-Cyd for 24 h, clonogenic survival was reduced by 50 and 98% at initial concns. of 10-7 and 10-6 M, resp., compared to 3 + 10-8 and 10-6 M, resp., for the same effect with 1-β-D-arabinofuranosylcytosine (ara-C). The analog is chemical unstable, with a t1/2 of 12 h at 37° in phosphate-buffered saline. Ara-5-aza-Cyd was not significantly deaminated by human cytidine-deoxycytidine deaminase [9025-06-3], in contrast to ara-C. It was phosphorylated by human cytoplasmic deoxycytidine kinase [9039-45-6], with a Km of 55 μM and a relative Vmax of 310% compared to dCyd. The primary metabolite (70%) in Molt-4 cells was identified as ara-5-aza-Cyd triphosphate [**98204-39-8**]. Thymidine but not uridine or amino acid incorporation was inhibited by ara-5-aza-Cyd, ara-5-aza-Cyd was incorporated in a dose-dependent manner into DNA, but not RNA, primarily in internucleotide linkage as the original compound Incorporation into the cellular methanol-insol. fraction was 3- to 5-fold higher at 8 h than was ara-C incorporation. Ara-5-aza-Cyd may have a unique activity against tumor cells resistant to ara-C, particularly where high cytidine-deoxycytidine deaminase activity is a factor. The mode of action, like that of ara-C, is probably mediated through its incorporation into DNA and inhibition of DNA synthesis.

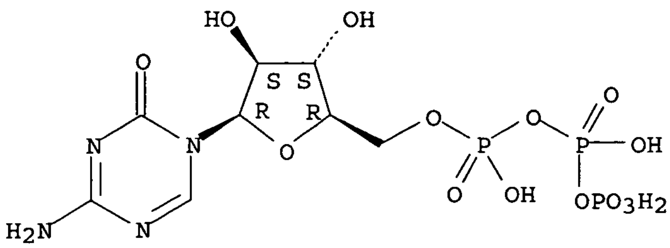
IT **98204-39-8**
RL: FORM (Formation, nonpreparative)

(formation of, as arabinofuranosylazacytosine metabolite, cytotoxicity in relation to, in human cells)

RN 98204-39-8 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-arabinofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 19 OF 37 HCAPLUS

ACCESSION NUMBER: 1985:500789 HCAPLUS

DOCUMENT NUMBER: 103:100789

TITLE: Synthesis and characterization of poly[d(G-aza5C)]. B-Z transition and inhibition of DNA methylase

AUTHOR(S): McIntosh, Lawrence P.; Zielinski, Wojciech S.; Kalisch, Bernd W.; Pfeifer, Gerd P.; Sprinzl, Mathias; Drahovsky, Dusan; Van de Sande, Johan H.; Jovin, Thomas M.

CORPORATE SOURCE: Abt. Mol. Biol., Max-Planck-Inst. Biophys. Chem., Goettingen, D-3400, Fed. Rep. Ger.

SOURCE: Biochemistry (1985), 24(18), 4806-14
CODEN: BICHAW; ISSN: 0006-2960

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Deoxy-5-azacytidine-5'-triphosphate was synthesized and used as a substrate for the enzymic synthesis of the polynucleotide, poly[d(G-aza5C)] (I). Whereas the triphosphate decomps. in solution, the azacytosine analog incorporated into DNA is stable under conditions preserving the double-helical structure. I underwent the transition to the left-handed Z conformation at salt (NaCl and MgCl2) concns. .apprx.30% higher than those required for unsubstituted poly[d(G-C)]. However, the incorporation of azacytidine potentiated the formation at room temperature of the Z helix stabilized by the transition metal, Mn2+; in the case of poly[d(G-C)], a heating step was required. The spectral properties of the 2 polymers in the B and Z forms were similar. Both left-handed forms were recognized by anti-Z DNA Igs, indicating that the DNAs bear common antigenic features. I was not a substrate for the DNA cytosine 5-methyltransferase from human placenta. It was a potent inhibitor of the enzyme when tested in a competitive binding assay. These results are compatible with a very strong, possibly covalent, mode of interaction between methyltransferases and DNA containing 5-azacytosine.

IT **91796-04-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(double-stranded, preparation and conformation of, DNA methylase inhibition in relation to)

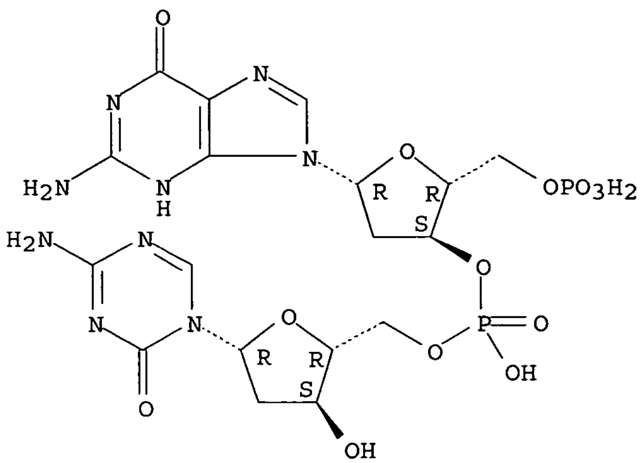
RN 91796-04-2 HCAPLUS

CN 5-Azacytidine, 2'-deoxy-5'-O-phosphonoguanylyl-(3'→5')-2'-deoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

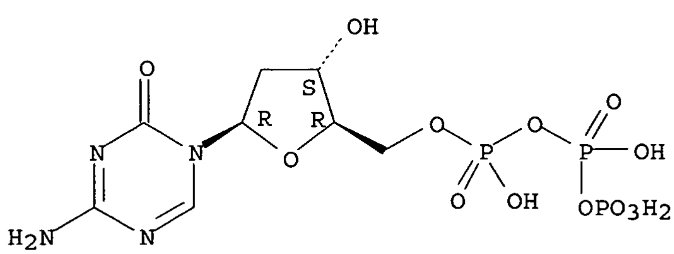
CRN 91796-03-1
CMF C18 H25 N9 O13 P2

Absolute stereochemistry.



IT **72052-96-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and enzymic polymerization of)
RN 72052-96-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

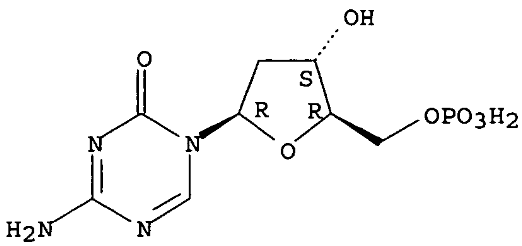


IT **97763-83-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and phosphorylation of)
RN 97763-83-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-pentofuranosyl)-, compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

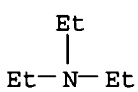
CRN 66642-55-5
CMF C8 H13 N4 O7 P

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N



L25 ANSWER 20 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:611640 HCAPLUS
DOCUMENT NUMBER: 101:211640
TITLE: Chemical synthesis of 5-azacytidine nucleotides and preparation of tRNAs containing 5-azacytidine in its 3'-terminus
AUTHOR(S): Zielinski, Wojciech S.; Sprinzl, Mathias
CORPORATE SOURCE: Dep. Biochem., Univ. Bayreuth, Bayreuth, D-8580, Fed. Rep. Ger.
SOURCE: Nucleic Acids Research (1984), 12(12), 5025-36
CODEN: NARHAD; ISSN: 0305-1048
DOCUMENT TYPE: Journal
LANGUAGE: English

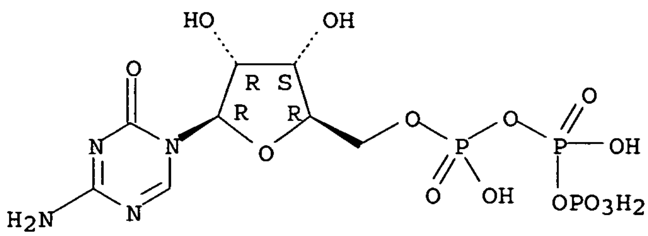
AB 5-Azacytidine 5'-triphosphate, prepared from 5-azacytidine by chemical phosphorylation, is a substrate for AMP(CMP)tRNA nucleotidyl transferase from yeast. TRNAsPhe from yeast containing 5-azacytidine in their 3'-termini were prepared enzymically. TRNAPhe-Cpn5CpA and tRNAPhe-n5Cpn5CpA can be aminoacylated by phenylalanyl-tRNA synthetase from yeast and they are active in the poly(U)-dependent synthesis of poly(Phe) on Escherichia coli ribosomes. The decomposition of 5-azacytidine via hydrolysis of the triazine ring is significantly accelerated by a phosphate group on the 5'-position of the nucleotide. After the incorporation of 5-azacytidine 5'-phosphate into a polynucleotide chain the rate of hydrolysis of the triazine ring decreases considerably.

IT **2226-74-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and enzymic incorporation of, into tRNA 3'-terminus)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

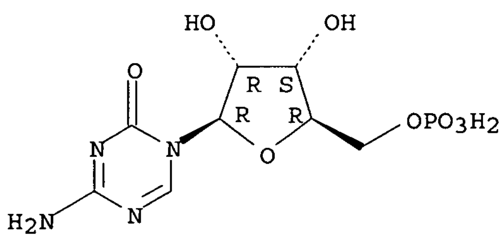


IT 93106-13-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and phosphorylation of, with tetrakistributylammonium pyrophosphate)
RN 93106-13-9 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)-, compd. with N,N-diethylethanamine (1:1) (9CI) (CA INDEX NAME)

CM 1

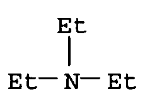
CRN 2226-72-4
CMF C8 H13 N4 O8 P

Absolute stereochemistry.



CM 2

CRN 121-44-8
CMF C6 H15 N



L25 ANSWER 21 OF 37 HCAPLUS
ACCESSION NUMBER: 1984:528533 HCAPLUS
DOCUMENT NUMBER: 101:128533
TITLE: Immunoglobulin recognition of synthetic and natural left-handed Z DNA conformations and sequences
AUTHOR(S): Zarling, David A.; Arndt-Jovin, Donna J.; Robert-Nicoud, Michel; McIntosh, Lawrence P.; Thomae, Ralf; Jovin, Thomas M.
CORPORATE SOURCE: Abt. Mol. Biol., Max Planck Inst. Biophys. Chem., Goettingen, D-3400, Fed. Rep. Ger.
SOURCE: Journal of Molecular Biology (1984), 176(3), 369-415

CODEN: JMOBAK; ISSN: 0022-2836
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The relative immunogenicities of the poly[d(G-C)] and poly[d(A-C)·d(G-T)] families of helices were determined The specificities of the resultant Igs were characterized for recognition of different synthetic and natural left-handed sequences and conformations. Certain modifications of poly[d(G-C)] in the sugar-phosphate backbone and cytosine C-5 potentiated the right(R)-to-left(L) (B→Z) transition under physiol. conditions. The resulting polynucleotides, poly[d(GS-C)], poly[d(G-io5C)], poly[d(G-br5C)], and poly[d(G-m5C)], were also highly immunogenic. In contrast, DNAs incapable of assuming the left-handed conformation under physiol. salt concns. were weakly or non-immunogenic. These include unmodified poly[d(G-C)] as well as members of the poly[d(A-C)·d(G-T)] family of sequences bearing pyrimidine C-5 substitutions (Me, bromo, iodo). These polynucleotides undergo the R → L isomerization under more stringent ionic and thermal conditions. The specificities of purified polyclonal and monoclonal anti-Z DNA Igs (IgG) were measured by binding to radiolabeled polynucleotides, by electrophoretic anal. of IgG bound to covalent closed circular DNAs, and by immunofluorexcent staining of polytene chromosomes. The anti-Z DNA IgGs were used to probe for specific left-handed Z DNA determinants on plasmid or viral DNAs, and on the acid-fixed polytene chromosomes of dipteran larvae. At their extracted superhelical d., the neg. supercoiled form I, but not the relaxed, nicked, or linear forms of all tested plasmid and viral DNAs specifically bound sequence-independent anti-Z IgGs. Dimers, trimers and higher oligomers of form I DNA cross-linked by bivalent anti-Z IgGs were formed with numerous genomes. Their occurrence depended upon IgG concentration and specificity, the conditions
of ionic strength and temps., and the DNA genome. IgGs differed in their ability to form stable complexes with some sites on natural DNAs, presumably due to their sequence and conformation binding specificities. A differential binding of these antibodies was also observed in certain bands of polytene chromosomes, such as the telomeric regions that are involved in chromosome assocns.

IT **91796-04-2**
RL: BIOL (Biological study)
(Z-form of, IgG recognition of, autoimmunity in relation to)

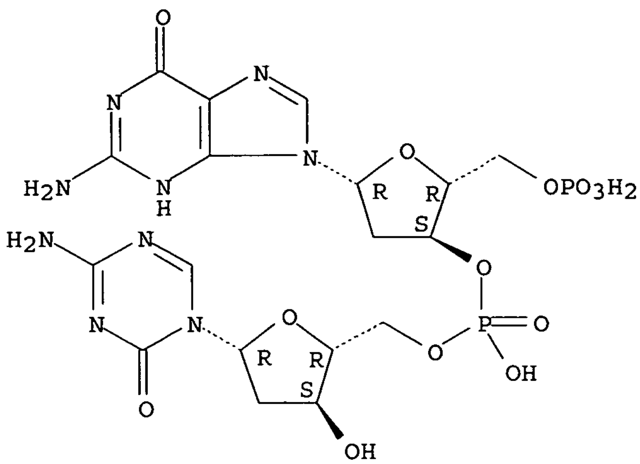
RN 91796-04-2 HCAPLUS

CN 5-Azacytidine, 2'-deoxy-5'-O-phosphonoguanylyl-(3'→5')-2'-deoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 91796-03-1
CMF C18 H25 N9 O13 P2

Absolute stereochemistry.



L25 ANSWER 22 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:448276 HCAPLUS
DOCUMENT NUMBER: 101:48276
TITLE: Kinetic interaction of 5-AZA-2'-deoxycytidine-5'-monophosphate and its 5'-triphosphate with deoxycytidylate deaminase
AUTHOR(S): Momparler, Richard L.; Rossi, Mose; Bouchard, Jacques; Vaccaro, Carlo; Momparler, Louise F.; Bartolucci, Simonetta
CORPORATE SOURCE: Hop. Ste-Justine, Univ. Montreal, Montreal, QC, H3T 1C5, Can.
SOURCE: Molecular Pharmacology (1984), 25(3), 436-40
CODEN: MOPMA3; ISSN: 0026-895X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 5-AZA-2'-deoxycytidine-5'-monophosphate (5-AZA-dCMP) [**66642-55-5**] was tested as a substrate, and 5-aza-2'-deoxycytidine-5'-triphosphate (5-AZA-dCTP) [**72052-96-1**] was tested as an allosteric effector of purified spleen dCMP deaminase [9026-92-0]. Graphic anal. of the velocity of deamination of 5-AZA-dCMP vs. its concentration gave a hyperbolic curve in which the estimated apparent Km was 0.1 mM. Since this curve was not sigmoidal and 5-AZA-dCMP at low concns. stimulated the rate of deamination of the natural substrate, dCMP [1032-65-1] it was proposed that the binding of 5-AZA-dCMP to the allosteric enzyme dCMP deaminase induced the R form. At substrate saturation, the rate of deamination of dCMP was 100-fold greater than that of 5-AZA-dCMP. DTTP [365-08-2] inhibited the deamination of 5-AZA-dCMP with first-order kinetics. This inhibition was reversed by either 5-AZA-dCTP or dCTP [2056-98-6]. However, dCTP alone produced only a weak activation of the deamination of 5-AZA-dCMP in comparison to the potent activation when dCMP was the substrate. 5-AZA-dCTP was just as effective as dCTP for the allosteric activation of the deamination of dCMP. Apparently, dCMP deaminase can play an important role in the metabolism of 5-aza-2'-deoxycytidine [2353-33-5] and may possibly modulate some of the pharmacol. activity of this antimetabolite.

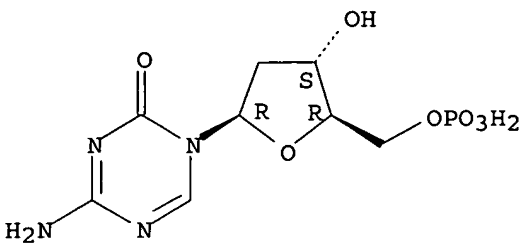
IT **66642-55-5 72052-96-1**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(azadeoxycytidine metabolism and antitumor activity in relation to)

RN 66642-55-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-

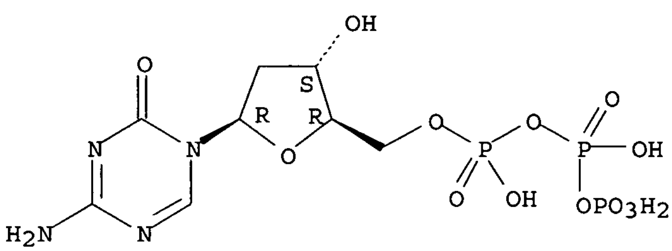
pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

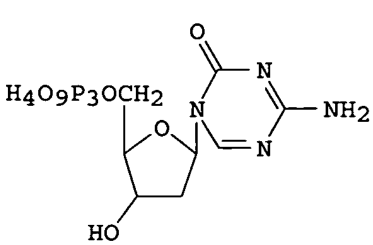


RN 72052-96-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 23 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:515670 HCAPLUS
DOCUMENT NUMBER: 99:115670
TITLE: Incorporation of 5-aza-2'-deoxycytidine-5'-triphosphate into DNA. Interactions with mammalian DNA polymerase α and DNA methylase
AUTHOR(S): Bouchard, Jacques; Momparler, Richard L.
CORPORATE SOURCE: Dep. Pharmacol., Univ. Montreal, Montreal, QC, H3T 1C5, Can.
SOURCE: Molecular Pharmacology (1983), 24(1), 109-14
CODEN: MOPMA3; ISSN: 0026-895X
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

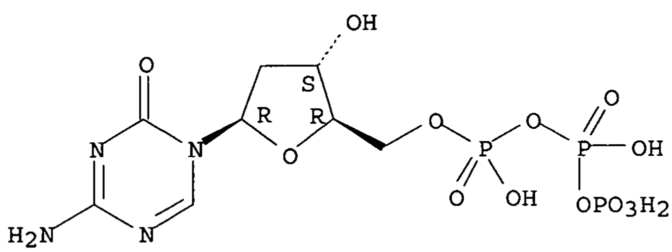
AB In order to understand further the mol. mode of action of 5-aza-2'-deoxycytidine (5-AZA-dCyd) [2353-33-5], a potent antileukemic agent, 5-aza-2'-deoxycytidine 5'-triphosphate (5-AZA-dCTP)(I) [**72052-96-1**] was prepared enzymically and studies were performed with purified DNA polymerase α [9012-90-2] and DNA methylase [9037-42-7] from mammalian cells. DNA polymerase α catalyzed the incorporation of 5-AZA-dCTP into DNA. The apparent Km value for 5-AZA-dCTP was estimated to be 3.0 μM; the Km of dCTP [2056-98-6] was 2.0 μM. The apparent Vmax of 5-AZA-dCTP was slightly lower than that for dCTP. 5-AZA-dCTP was a weak competitive inhibitor (Ki 4.3 μM) with respect to dCTP. Template studies with 5-AZA-dCTP showed that this nucleotide analog was incorporated into poly(dI-dC) [34607-75-5], but not into poly(dA-dT) [26966-61-0], suggesting that the incorporation follows the rules of Watson-Crick base pairing. Incorporation of 5-AZA-dCTP into hemimethylated DNA produced a significant inhibition of DNA methylase. Apparently, 5-AZA-dCTP is a very good substrate for DNA polymerase α and its incorporation into DNA inhibits DNA methylation.

IT **72052-96-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and incorporation into DNA of)

RN 72052-96-1 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

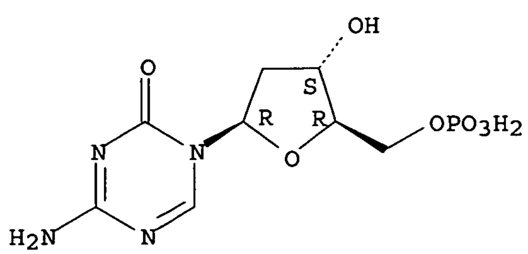


IT **66642-55-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with nucleoside kinases)

RN 66642-55-5 HCAPLUS

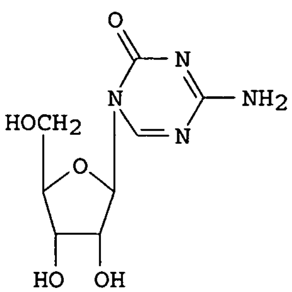
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 24 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:132037 HCAPLUS
DOCUMENT NUMBER: 94:132037
TITLE: Effect of N-(phosphonacetyl)-L-aspartate on 5-azacytidine metabolism in P388 and L1210 cells
AUTHOR(S): Grant, Steven; Rauscher, Frank, III; Jakubowski, Ann; Cadman, Ed
CORPORATE SOURCE: Sch. Med., Yale Univ., New Haven, CT, 06510, USA
SOURCE: Cancer Research (1981), 41(2), 410-18
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

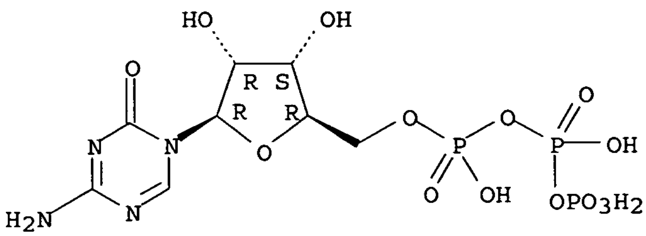
AB The effect of NSC 22413 (N-phosphonacetyl-L-aspartate) (PALA) [51321-79-0] pretreatment on the metabolism and cytotoxicity of 5-azacytidine (I) [320-67-2] was studied in 2 murine leukemic cell lines. Exposure of P388 and L1210 cells to 3 mM PALA for 3 h before adding I at 75 μM was accompanied by a 2-fold increment in acid-soluble and a 3-fold increment in acid-insol. incorporation of I in both cell lines. RNA incorporation of I increased from 97.5 pmol I/μg D-ribose in control cells to 299.2 in PALA-treated cells; a smaller increment in DNA incorporation of I was also noted. Sequential treatment of cells with PALA and I was associated with a 40% reduction in protein synthesis, compared to only 2 and 8% reduction, resp., produced by the drugs given alone. Sequential administration of PALA and I resulted in greater than additive cytotoxicity as measured by both growth inhibition and in vitro soft-agar cloning assays. Exposure of both cell lines to 3 mM PALA reduced intracellular levels of CTP [65-47-4] and UTP [63-39-8]; intracellular accumulation of 5-azacytidine triphosphate [**2226-74-6**], the lethal metabolite of I, increased from 43.4 to 92.4 pmol/106 cells in PALA-treated cells. PALA was able to augment the metabolism and cytotoxicity of I in a uridine-cytidine kinase-mutant I-resistant L5178Y subline. This sequential drug combination has a rational biochem. basis and may offer significant advantages over either drug administered alone, especially in cells which are resistant to I.

IT **2226-74-6**
RL: FORM (Formation, nonpreparative)
(formation of, as azacytidine metabolite, in neoplasm, phosphonacetylaspartate effect on)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 25 OF 37 HCAPLUS

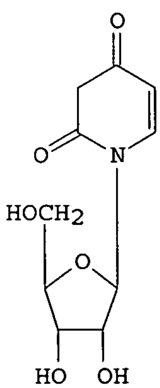
ACCESSION NUMBER: 1980:630567 HCAPLUS
DOCUMENT NUMBER: 93:230567

TITLE: Altered 5-azacytidine metabolism following 3-deazauridine treatment of L5178Y and human myeloblasts

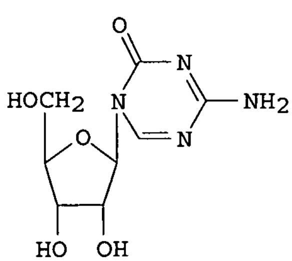
AUTHOR(S): Grant, Steven; Cadman, Ed
CORPORATE SOURCE: Dep. Med. Pharmacol., Yale Sch. Med., New Haven, CT, 06510, USA

SOURCE: Cancer Research (1980), 40(11), 4000-6
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English

GI



I



II

AB The effect of 3-deazauridine (I) [23205-42-7] pretreatment on 5-azacytidine (II) [320-67-2] metabolism was studied in suspension cultures of L5178Y murine leukemia. A 3-h exposure to 2 μM 3-deazauridine followed by a 1-h exposure to 5 μM [14C]-5-azacytidine resulted in a 2-fold increase in total intracellular 5-azacytidine accumulation compared to untreated controls. Under the same conditions, incorporation of 5-azacytidine into the acid precipitable fraction of L5178Y cells was increased 3-fold. Incorporation of 5-azacytidine into RNA increased 85% following 3-deazauridine pretreatment, but 5-azacytidine incorporation into DNA did not change significantly. In cells pretreated with 3-deazauridine, there was an 80% reduction of intracellular cytidine triphosphate [65-47-4], the natural feedback inhibitor or uridine-cytidine kinase, the rate-limiting enzyme in the phosphorylation of 5-azacytidine. Intracellular levels of 5-azacytidine triphosphate [**2226-74-6**], the presumed lethal metabolite of 5-azacytidine,

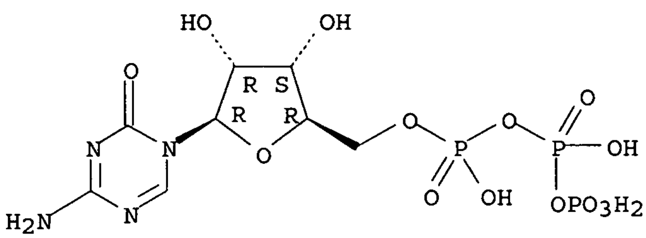
increased from 28.8 pmol/106 cells in control cells to 56.4 pmol/106 cells following 3-deazauridine treatment. The sequence of 3-deazauridine followed by 5-azacytidine demonstrated synergistic cell killing when measured by an in vitro soft-agar cloning assay. Similar biochem. alterations were also seen in human leukemic myeloblasts. It appears that 3-deazauridine-induced alterations in 5-azacytidine metabolism may account for the enhanced cytotoxicity of this drug sequence.

IT **2226-74-6**
RL: BIOL (Biological study)
(as azacytidine metabolite, antileukemic activity in relation to)

RN 2226-74-6 HCAPLUS

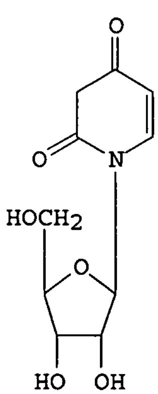
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 26 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

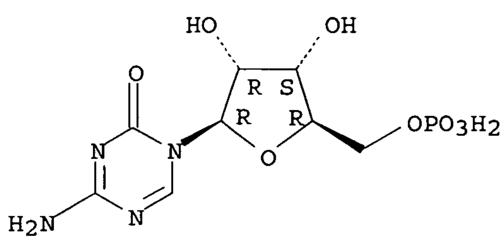
ACCESSION NUMBER: 1980:461052 HCAPLUS
DOCUMENT NUMBER: 93:61052
TITLE: Cytidine and deoxycytidylate deaminase inhibition by uridine analogs
AUTHOR(S): Drake, James C.; Hande, Kenneth R.; Fuller, Richard W.; Chabner, Bruce A.
CORPORATE SOURCE: Div. Cancer Treat., Natl. Cancer Inst., Bethesda, MD, 20205, USA
SOURCE: Biochemical Pharmacology (1980), 29(5), 807-11
CODEN: BCPCA6; ISSN: 0006-2952
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

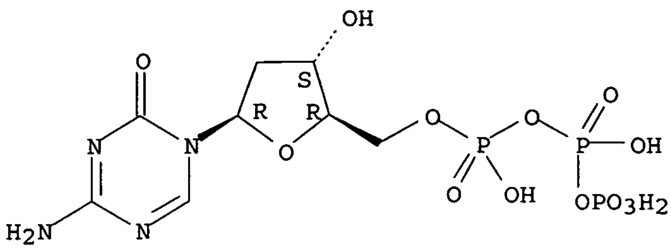
AB Uridine [58-96-8], and its analog, 3-deazauridine (I) [23205-42-7], 5-bromodeoxyuridine [59-14-3], 5-fluorodeoxyuridine [50-91-9], and 6-azauridine [54-25-1] (0.5-1.0 mM) competitively inhibited cytidine deaminase [9025-06-3] of granulocytes; I was the most potent inhibitor with a Ki of 1.9 + 10-5M. Deoxycytidylate deaminase [9026-92-0] of leukemic cells was competitively inhibited by 3-deaza-UMP [54267-17-3] and nucleotides of other uridine analogs. Thus, uridine analogs, such as I, may have value in protecting the antitumor agents cytosine arabinoside, 5-azacytidine [320-67-2], and their monophosphate nucleotides from degradation by deaminases.
IT **2226-72-4**
RL: BIOL (Biological study)
(uridine analogs inhibition of deaminases in relation to protection of)
RN 2226-72-4 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



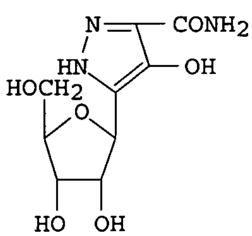
L25 ANSWER 27 OF 37 HCAPLUS
ACCESSION NUMBER: 1979:606249 HCAPLUS
DOCUMENT NUMBER: 91:206249
TITLE: Kinetics of phosphorylation of 5-aza-2'-deoxycytidine by deoxycytidine kinase
AUTHOR(S): Momparler, Richard L.; Derse, David
CORPORATE SOURCE: Dep. Pharmacol., Univ. Southern California, Los Angeles, CA, USA
SOURCE: Biochemical Pharmacology (1979), 28(8), 1443-3
CODEN: BCPCA6; ISSN: 0006-2952
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Phosphorylation by calf thymus deoxycytidine kinase of 5-aza-2'-deoxycytidine (Km 63 μM) was competitively inhibited by deoxycytidine (Ki 9 μM, Km 14 μM). Both dCTP and 5-aza-dCTP also inhibited phosphorylation of 5-aza-2'-deoxycytidine, 20 μM concns. giving 59 and 25% inhibition, resp., at 20 μM 5-aza-2'-deoxycytidine.
IT **72052-96-1**
RL: BIOL (Biological study)
(azadeoxycytidine phosphorylation by deoxycytidine kinase inhibition by, kinetics of)
RN 72052-96-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 28 OF 37 HCAPLUS

ACCESSION NUMBER: 1979:80773 HCAPLUS
DOCUMENT NUMBER: 90:80773
TITLE: Pyrazofurin enhancement of 5-azacytidine antitumor activity in L5178Y and human leukemia cells
AUTHOR(S): Cadman, Ed; Eiferman, Fern; Heimer, Robert; Davis, Lynn
CORPORATE SOURCE: Dep. Med. Pharmacol., Yale Sch. Med., New Haven, CT, USA
SOURCE: Cancer Research (1978), 38(12), 4610-17
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

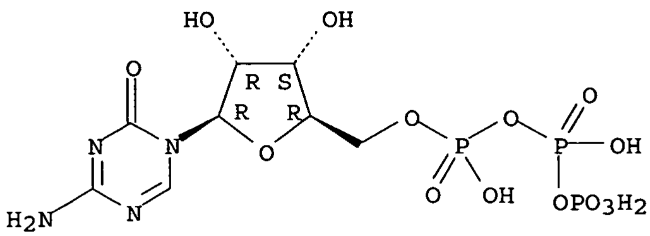
AB Pyrazofurin (I) [30868-30-5] (5 + 10-6 M) which inhibited orotidylate decarboxylase [9024-62-8] and produced an 80% decrease in uridine triphosphate [63-39-8] resulted in more rapid accumulation of 5-azacytidine [320-67-2] into, and enhanced killing of, rapidly dividing leukemia cells. Ribonucleotide anal. of I-treated cells demonstrated a 400% increase of 5-aza-CTP **[2226-74-6]** which was incorporated in greater quantities into RNA and resulted in a 40% decrease of leucine incorporation into protein. Apparently, I potentiated the inhibition of protein synthesis by 5-azacytidine. I followed by 5-azacytidine for the treatment of rapidly proliferating human leukemia may be a useful sequential drug combination when standard forms of antileukemic therapy have failed.

IT **2226-74-6**
RL: FORM (Formation, nonpreparative)
(formation of, leukemia treatment by azacytidine and pyrazofurin in relation to)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 29 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:400127 HCAPLUS

DOCUMENT NUMBER: 89:127

TITLE: Transformation of 3H-5-aza-2'-deoxycytidine and its incorporation in different systems of rapidly proliferating cells

AUTHOR(S): Cihak, Alois

CORPORATE SOURCE: Inst. Org. Chem. Biochem., Czech. Acad. Sci., Prague, Czech.

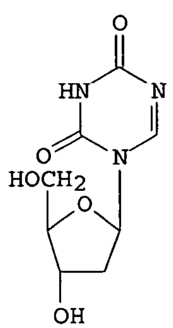
SOURCE: European Journal of Cancer (1965-1981) (1978), 14(2), 117-24

CODEN: EJCAAH; ISSN: 0014-2964

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



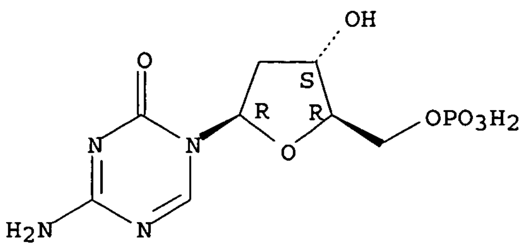
I

AB Tritiated 5-aza-2'-deoxycytidine (I) [2353-33-5] underwent, in Ehrlich ascitic cells, phosphorylation and deamination resulting in the formation of new metabolites. In the acid-soluble pool of tetrahydrouridine-treated cells the level of deaminated analog and of 5-azauracil [71-33-0] formed by phosphorolytic cleavage was substantially decreased. Both in vivo and in cell suspensions I was incorporated into nucleic acids. In AKR mice with lymphatic leukemia the drug was preferentially incorporated into lymphatic tissues. While blast infiltration of the liver resulted in a 3-4 fold increase of the uptake of I, the incorporation of thymidine-3H was enhanced 12-17 times. Cytosine arabinoside depressed the incorporation of thymidine-3H as well as I. In regenerating rat liver, thymidine and deoxycytidine, but not I, were utilized with a greater efficiency than in the stationary liver. I is thus incorporated into rapidly proliferating cells while its uptake into the lymphatic system is preferential.

IT **66642-55-5**

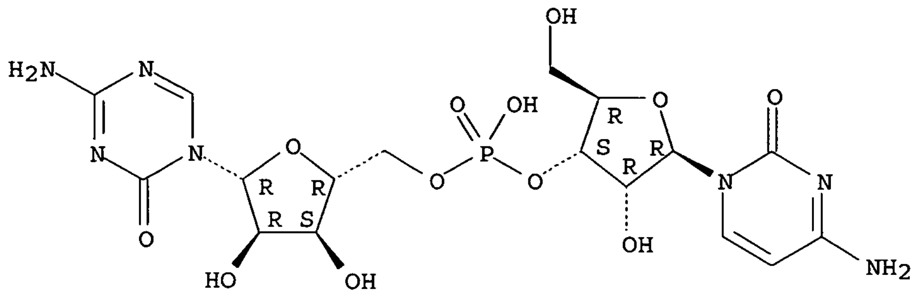
RL: BIOL (Biological study)
(as azadeoxycytidine metabolite, in proliferating cells)
RN 66642-55-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-5-O-phosphono-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



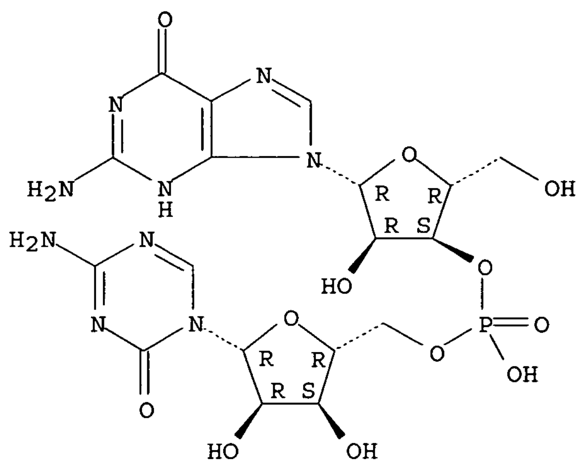
L25 ANSWER 30 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1978:100809 HCAPLUS
DOCUMENT NUMBER: 88:100809
TITLE: Step-wise oligonucleotide synthesis. XXIV. The 5-substituted pyrimidine nucleosides as phosphate acceptors in the synthesis of internucleotide bonds catalyzed by ribonucleases of different specificity
AUTHOR(S): Zhenodarova, S. M.; Sedel'nikova, E. A.; Smolyaninova, O. A.; Soboleva, I. A.; Khabarova, M. I.
CORPORATE SOURCE: Inst. Biol. Phys., Pushchino, USSR
SOURCE: Bioorganicheskaya Khimiya (1977), 3(11), 1479-83
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Dinucleoside monophosphates (CpN, GpN, and ApN) were synthesized from nucleoside 2',3'-cyclic phosphates and 5-substituted pyrimidine nucleosides (5-methyldeoxycytidine, 5-bromodeoxycytidine, 5-iododeoxycytidine, 5-methyluridine, 5-methyldeoxyuridine, 5-fluorodeoxyuridine, 5-azacytidine) with the participation of RNase A, RNase T1 and Penicillium brevicompactum RNase. The effects caused by the substituents in the position 5 of phosphate acceptors were different for RNases of different substrate specificity. Apparently, the RNases used differ in the arrangement of contact sites for phosphate acceptors.
IT **65676-38-2 65676-44-0 65676-49-5**
RL: FORM (Formation, nonpreparative)
(formation of, by RNase)
RN 65676-38-2 HCAPLUS
CN 5-Azacytidine, cytidylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



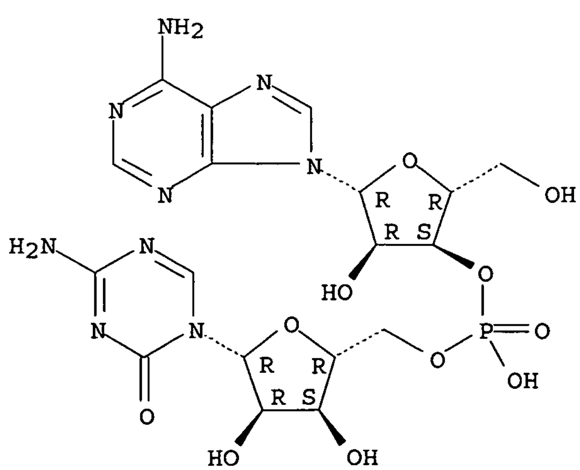
RN 65676-44-0 HCAPLUS
CN 5-Azacytidine, guanylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



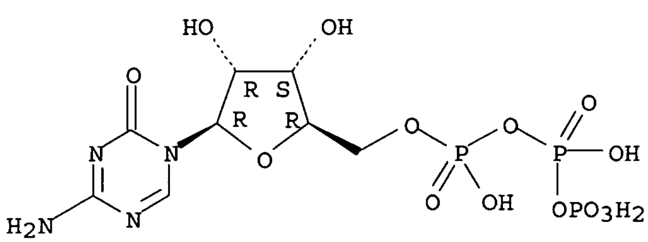
RN 65676-49-5 HCAPLUS
CN 5-Azacytidine, adenylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 31 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:478133 HCAPLUS
DOCUMENT NUMBER: 87:78133
TITLE: Kinetic studies with 5-azacytidine-5'-triphosphate and DNA-dependent RNA polymerase
AUTHOR(S): Lee, Thomas T.; Momparler, Richard L.
CORPORATE SOURCE: Sch. Med., Univ. South. California, Los Angeles, CA, USA
SOURCE: Biochemical Pharmacology (1977), 26(5), 403-6
CODEN: BCPCA6; ISSN: 0006-2952
DOCUMENT TYPE: Journal
LANGUAGE: English
AB DNA-dependent RNA polymerase [9014-24-8] purified from Escherichia coli and calf thymus catalyzed the incorporation of 5-aza-CTP [**2226-74-6**] into RNA, kM 350 and 390μM resp. The kM value for 5-aza-CTP was .apprx.18-fold greater than the kM for CTP. The Vmax for CTP was .apprx.2-fold greater than that for 5-aza-CTP. 5-Aza-CTP was a weak competitive inhibitor with respect to CTP, Ki 680 and 810μM for E. coli and thymus polymerases resp. Also, CTP was a potent competitive inhibitor with respect to 5-aza-CTP, Ki 16μM. 5-Aza-CTP did not inhibit the incorporation of UTP into RNA in the reaction catalyzed by RNA polymerase. Inhibition of RNA synthesis in cells by 5-aza-cytidine is not produced by the inhibition of RNA polymerase by 5-aza-CTP.
IT **2226-74-6**
RL: BIOL (Biological study)
(RNA polymerase response to)
RN 2226-74-6 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 32 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:83526 HCAPLUS
DOCUMENT NUMBER: 86:83526
TITLE: Inhibition of uridine-cytidine kinase by 5-azacytidine 5'-triphosphate
AUTHOR(S): Lee, Thomas T.; Momparler, Richard L.
CORPORATE SOURCE: Cancer Cent., Univ. South. California, Los Angeles, CA, USA
SOURCE: Medical and Pediatric Oncology (1976), 2(3), 265-70
CODEN: MPONDB; ISSN: 0098-1532
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 5-Azacytidine 5'-triphosphate (I) [**2226-74-6**] inhibited the phosphorylation of uridine, cytidine, and 5-azacytidine (5-aza-C) in a reaction catalyzed by uridine-cytidine kinase [9026-39-5] of calf thymus. The inhibition appeared to be competitive with respect to ATP and noncompetitive with respect to nucleoside substrates. I was a potent

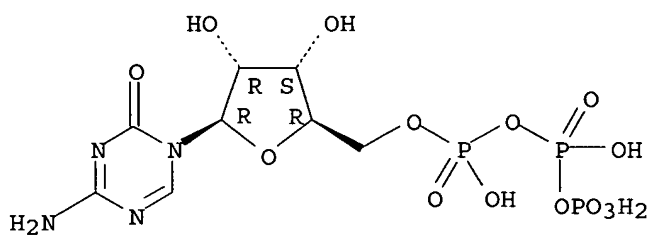
inhibitor of 5-aza-C phosphorylation but a weak inhibitor of uridine and cytidine phosphorylation. These results suggest that the feedback inhibition of uridine-cytidine kinase by I may limit the amount of intracellular nucleotide analog formed in drug-treated cells.

IT **2226-74-6**
RL: BIOL (Biological study)
(uridine kinase inhibition by)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



ACCESSION NUMBER: 1976:147211 HCAPLUS
DOCUMENT NUMBER: 84:147211
TITLE: Enzymatic synthesis of 5-azacytidine 5'-triphosphate from 5-azacytidine
AUTHOR(S): Lee, Thomas T.; Momparler, Richard L.
CORPORATE SOURCE: Sch. Med., Univ. South. California, Los Angeles, CA, USA
SOURCE: Analytical Biochemistry (1976), 71(1), 60-7
CODEN: ANBCA2; ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: English

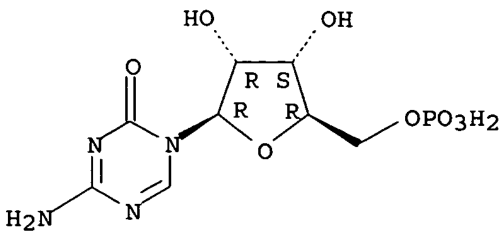
AB 5-Azacytidine 5'-monophosphate (I) was synthesized enzymically from 5-azacytidine (II) in a reaction catalyzed by uridine-cytidine kinase. In a 2nd step, 5-azacytidine 5'-triphosphate (III) was synthesized enzymically from I by using CMP kinase and nucleoside diphosphokinase. Due to the chemical instability of the triazide ring of 5-azacytosine at neutral and alkaline pH, the enzymic synthesis and purification of the nucleotides by ion-exchange chromatog. were performed at acid pH. The enzymically synthesized III had a uv absorbance spectrum at pH 5.5 similar to the spectrum of II. In the DNA-dependent RNA polymerase reaction, III inhibited the incorporation of CTP-3H but not UTP-3H into RNA.

IT **2226-72-4 2226-74-6**
RL: RCT (Reactant); RACT (Reactant or reagent)
(enzymic synthesis of, from 5-azacytidine)

RN 2226-72-4 HCAPLUS

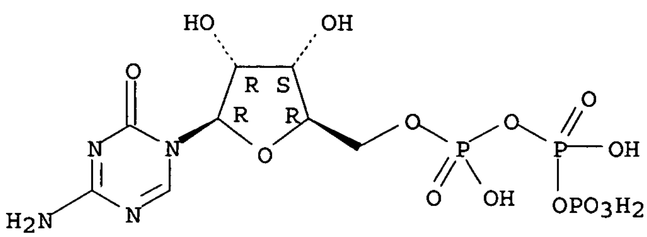
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



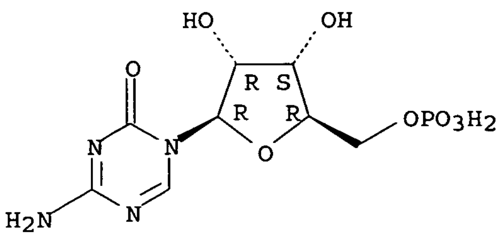
RN 2226-74-6 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 34 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:106210 HCAPLUS
DOCUMENT NUMBER: 82:106210
TITLE: Kinetic studies on phosphorylation of 5-azacytidine with the purified uridine-cytidine kinase from calf thymus
AUTHOR(S): Lee, Thomas; Karon, Myron; Momparler, Richard L.
CORPORATE SOURCE: Sch. Med., Univ. South. California, Los Angeles, CA, USA
SOURCE: Cancer Research (1974), 34(10), 2482-8
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Uridine-cytidine kinase [9026-39-5] purified 330-fold from calf thymus catalyzed the phosphorylation of 5-azacytidine (I) [320-67-2], uridine [58-96-8], and cytidine [65-46-3] to their resp. nucleoside 5'-monophosphates with Km values of 200, 40, and 50 μM, resp. UTP and CTP inhibited this Mg2+- and ATP-dependent phosphorylation. Uridine and cytidine competitively inhibited I phosphorylation.
IT **2226-72-4**
RL: FORM (Formation, nonpreparative)
(formation of, by uridine-cytidine kinase)
RN 2226-72-4 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 35 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:81626 HCAPLUS
DOCUMENT NUMBER: 76:81626
TITLE: Differential incorporation of 5-azapyrimidines into the RNA of phage f2 and of bacterial host
AUTHOR(S): Doskocil, Jiri; Sorm, Frantisek
CORPORATE SOURCE: Ustav Org. Chem. Biochem., Cesk. Akad. Ved, Prague, Czech.
SOURCE: European Journal of Biochemistry (1971), 23(2), 253-61
CODEN: EJBCAI; ISSN: 0014-2956
DOCUMENT TYPE: Journal
LANGUAGE: English

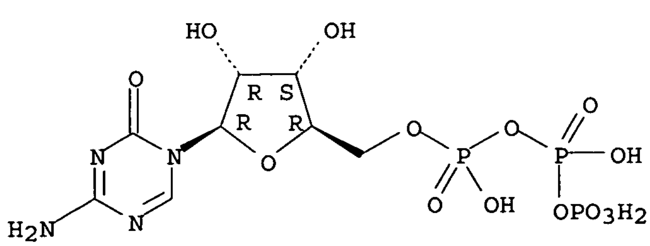
AB 5-Azacytosine [931-86-2] was incorporated in place of cytosine [71-30-7], and to a lesser extent in place of uracil [66-22-8] in phage f2-infected Escherichia coli K12 cultures. Particles of phage f2 formed in the presence of 5-azacytidine had an almost normal sedimentation coefficient and buoyant density, but their infectivity with respect to populations of normal phage was reduced. RNA extracted from these particles was partly degraded to small fragments and had very low template activity. Phage RNA replicase utilized both 5-azacytidine triphosphate [**2226-74-6**] and 5-azauridine triphosphate [34330-32-0] in vivo for the synthesis of RNA. Phage RNA, however, contained less 5-azacytosine than either replicative-form RNA or host RNA.

IT **2226-74-6**
RL: PRP (Properties)
(substrate, for RNA replicase of bacteriaphage f2)

RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 36 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1967:9253 HCAPLUS
DOCUMENT NUMBER: 66:9253
TITLE: Anabolic transformations of 5-azacytidine in mouse brain

AUTHOR(S): Raska, Karel, Jr.; Jurovcik, Michal; Sormova, Zora; Sorm, Frantisek
CORPORATE SOURCE: Ceskoslov. Akad. Ved, Prague, Czech.
SOURCE: Collection of Czechoslovak Chemical Communications (1966), 31(7), 2803-8
CODEN: CCCCAK; ISSN: 0010-0765
DOCUMENT TYPE: Journal
LANGUAGE: English

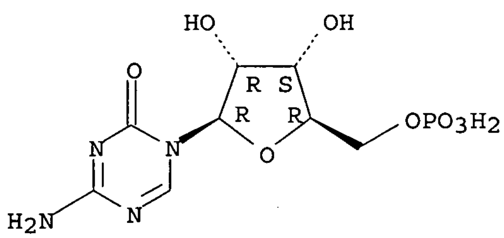
AB Labeled 5-azacytidine (I) injected in vivo into the lateral ventricle is rapidly metabolized to 5'-mono-, di-, and triphosphate and incorporated into RNA at a faster rate than precedes the incorporation of I into kidney, liver, or Ehrlich ascites RNA after intraperitoneal application owing to the higher polynucleotide pyrophosphorylase activity of the brain tissue. The phosphorylation of I by a particle-free brain tissue extract in vitro shows a similar course as in other tissues, giving rise only to I 5'-monophosphate.

IT **2226-72-4 2226-74-6**
RL: BIOL (Biological study)
(formation from 5-azacytidine by brain)

RN 2226-72-4 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

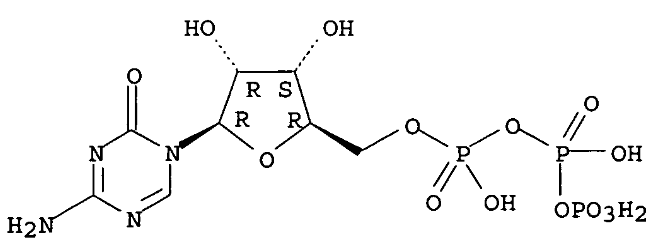
Absolute stereochemistry.



RN 2226-74-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy[[hydroxy(phosphonooxy)pho sphinyl]oxy]phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L25 ANSWER 37 OF 37 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1965:491808 HCAPLUS
DOCUMENT NUMBER: 63:91808
ORIGINAL REFERENCE NO.: 63:16893d-f
TITLE: Anabolic transformation of a novel antimetabolite, 5-azacytidine, and evidence for its incorporation into ribonucleic acid
AUTHOR(S): Jurovcik, M.; Raska, K., Jr.; Sormova, Z.; Sorm, F.

CORPORATE SOURCE: Ceskoslov. Akad. Ved, Prague
SOURCE: Collection of Czechoslovak Chemical Communications (1965), 30(10), 3370-6
CODEN: CCCCAK; ISSN: 0010-0765
DOCUMENT TYPE: Journal
LANGUAGE: English

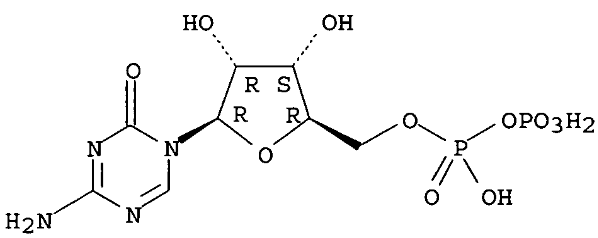
AB 5-Azacytidine-4-14C (I) was phosphorylated in vivo in the Ehrlich ascitic cells of mice to the mono-, di-, and triphosphates, but only to the monophosphate in a cell-free ascitic extract in vitro. The phosphorylation of I in vitro was higher in the thymus and spleen than in the liver and kidney. There was practically no difference in the phosphorylation in the organs of healthy and leukemic mice. I was incorporated in vivo into RNA and DNA of normal and tumor-bearing mice; the highest activity was in the hepatic and ascitic RNA and much lower in renal RNA, while the incorporation of I into DNA was still lower and was not studied quant. The form in which I exists in the nucleic acid mol. is discussed

IT **2226-73-5**, s-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl-, 5'-pyrophosphate
(formation by carcinoma)

RN 2226-73-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[hydroxy(phosphonooxy)phosphinyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

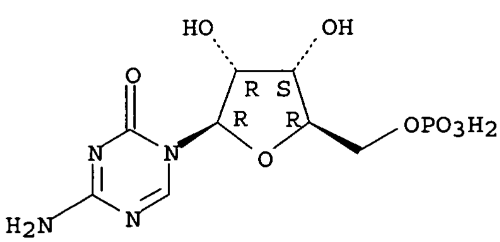


IT **2226-72-4**, s-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl-, 5'-phosphate
(formation by carcinoma and lymphoid tissue)

RN 2226-72-4 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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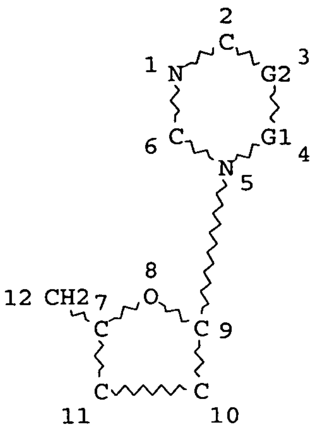
L1 STR



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VAR G2=C/N
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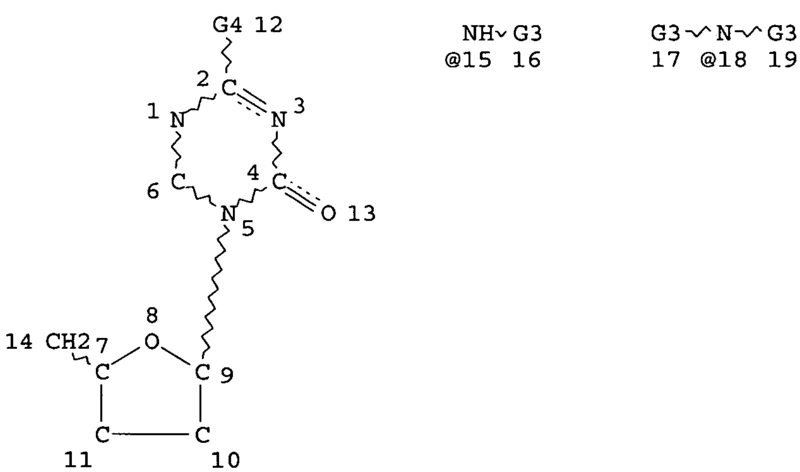
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
L2 115173 SEA FILE=REGISTRY SSS FUL L1
L9 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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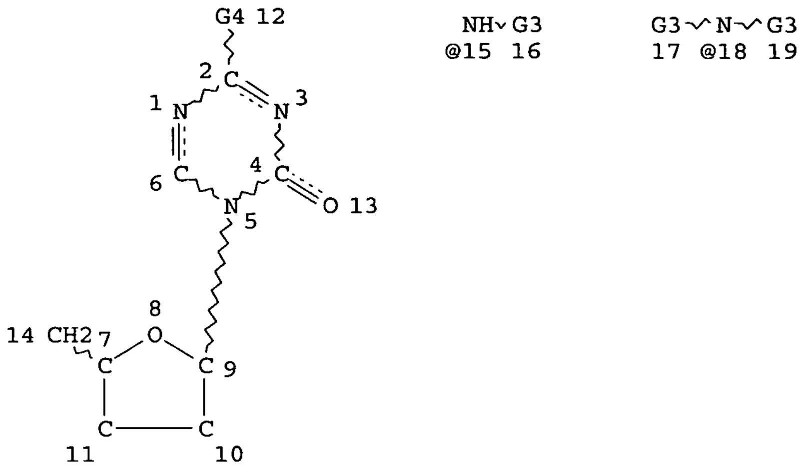
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
L11 STR



VAR G3=AK/CY
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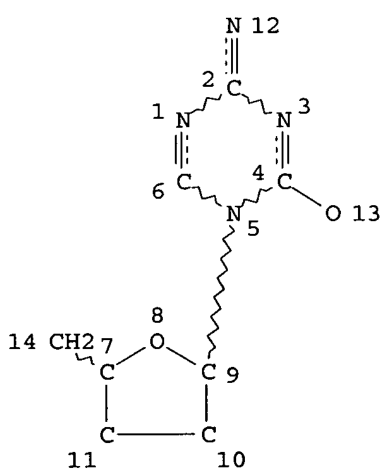
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
L15 STR



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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 4 9
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
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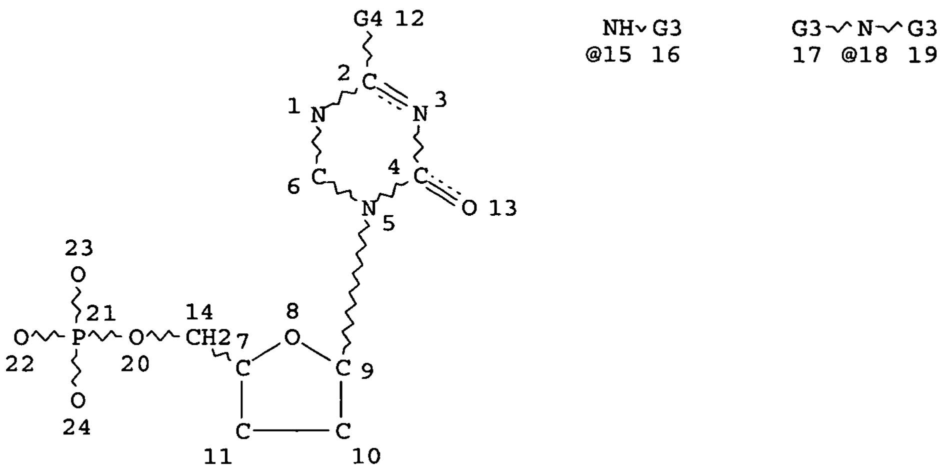
L20 238 SEA FILE=REGISTRY SUB=L2 SSS FUL L9
L23 STR



VAR G3=AK/CY
VAR G4=NH2/15/18
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
L24 23 SEA FILE=REGISTRY SUB=L20 SSS FUL L23
L26 212 SEA FILE=REGISTRY ABB=ON PLU=ON (L18 OR L20) NOT (L19 OR L24)
L27 2250 SEA FILE=HCAPLUS ABB=ON PLU=ON L26
L29 61481 SEA FILE=HCAPLUS ABB=ON PLU=ON (VIRUSTATS/CV OR "ANTIVIRAL AGENTS"/CV) OR ANTIVIR? OR VIRUSTAT?
L30 30 SEA FILE=HCAPLUS ABB=ON PLU=ON L27(L)L29

=>
=>

=> d ibib abs hitstr l30 1-30

L30 ANSWER 1 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1117349 HCAPLUS
DOCUMENT NUMBER: 143:446687
TITLE: Compositions containing lipid conjugates with nucleoside analogues
INVENTOR(S): Jin, Yiguang; Li, Miao; Tong, Li; Wang, Lin; Peng, Tao
PATENT ASSIGNEE(S): Institute of Radiation Medicine, Academy of Military Medical Sciences, PLA, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 19 pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent

LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1566130	A	20050119	CN 2003-148546	20030703

PRIORITY APPLN. INFO.: CN 2003-148546 20030703

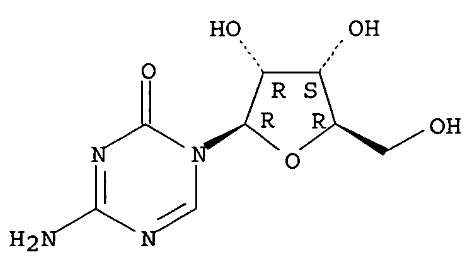
AB This invention discloses a lipid derivative of nucleoside analog and its salt, wherein the lipid derivative of nucleoside analog has a structure represented by Nu-L-R, in which the Nu is a group of nucleoside analog; L is a aliphatic linking group and R is a lipid group; Nu, L and R are linked by an ester or an amido bond; R is a mono- or di-glyceride of fatty acid, or a mono- or di-ester of dicarboxylic amino acid with aliphatic alc., wherein the fatty acid of R has linear aliphatic chains with C10-22; and L has a carbon atom number within 2-8. The lipid derivative of nucleoside analog and its salt, or in combination with additives, can be made into highly dispersed delivery systems including liposome, vesicle formed by nonionic surfactant, nanoparticle, microemulsion, and self-assembled delivery system. The lipid derivative and its delivery system can be applied in nucleoside medicines to improve its bioavailability, targeting efficiency, and sustained release property. For example, liposomes contained an acyclovir conjugate with lipid prepared by mixing acyclovir, succinic anhydride, DCC,and monostearyl glyceride.

IT **320-67-2DP**, Azacitidine, lipid conjugates
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(antitumor and **antiviral** pharmaceutical compns. containing lipid-nucleoside conjugates)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 2 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:696887 HCAPLUS
DOCUMENT NUMBER: 143:194107
TITLE: Pyrimidyl phosphonate antiviral compounds and methods of use
INVENTOR(S): Jin, Haolun; Kim, Choung U.
PATENT ASSIGNEE(S): Gilead Sciences, Inc., USA
SOURCE: PCT Int. Appl., 170 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005070901	A2	20050804	WO 2005-US815	20050111

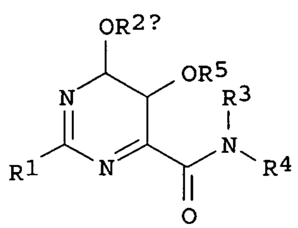
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

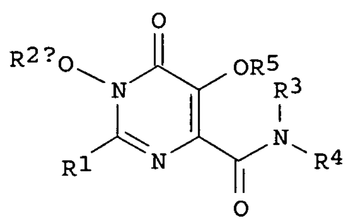
US 2005282839	A1	20051222	US 2005-33422	20050111
PRIORITY APPLN. INFO.:			US 2004-536010P P	20040112

OTHER SOURCE(S): MARPAT 143:194107

GI



I



II

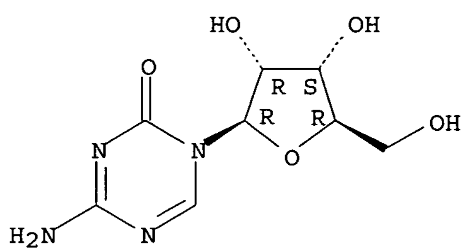
AB Pyrimidine I and pyrimidinone II phosphonate compds. R1 = H, F, Cl, Br, I, OH, OR, NH2, ammonium, alkylamino, dialkylamino, trialkylammonium, carboxy, sulfate, sulfamate, sulfonate, 5-7 membered ring sultam, 4-dialkylaminopyridinium, alkyl sulfone, aryl sulfone, aryl sulfoxide, arylthio, sulfonamide, alkyl sulfoxide, formyl, ester, amido, 5-7 membered ring lactone, nitrile, azido, nitro, C1-18 alkyl, C1-18 substituted alkyl, C2-18 alkenyl, C2-C18 substituted alkenyl, C2-18 alkynyl, C2-18 substituted alkynyl, C6-20 aryl, C6-20 substituted aryl, C2-20 heterocycle, and C2-20 substituted heterocycle, phosphonate, phosphate, polyethyleneoxy, a protecting group, etc. R2a, R5 = independently selected from H, carboxy, sulfate, sulfamate, sulfonate, 5-7 membered ring sultam, 4-dialkylaminopyridinium, alkyl sulfone, aryl sulfone, aryl sulfoxide, arylthio, sulfonamide, alkyl sulfoxide, formyl, ester, amido, 5-7 membered ring lactam, 5-7 membered ring lactone, nitrile, azido, nitro, C1-18 alkyl, C1-18 substituted alkyl, C2-18 alkenyl, C2-18 substituted alkenyl, C2-18 alkynyl, C2-18 substituted alkynyl, C6-20 aryl, C6-20 substituted aryl, C2-20 heterocycle, and C2-20 substituted heterocycle, phosphonate, phosphate, polyethyleneoxy, a protecting group, etc.; R2b, R3, R4 = H, OH, OR, amino, ammonium, alkylamino, dialkylamino, trialkylammonium, carboxy, sulfate, sulfamate, sulfonate, 5-7 membered ring sultam, 4-dialkylaminopyridinium, alkyl sulfone, aryl sulfone, aryl sulfoxide, arylthio, sulfonamide, alkyl sulfoxide, formyl, ester, amido, 5-7 membered ring lactam, 5-7 membered ring lactone, nitrile, azido,

nitro, C1-18 alkyl, C1-18 substituted alkyl, C2-18 alkenyl, C2-18 substituted alkenyl, C218 alkynyl, C2-18 substituted alkynyl, C6-20 aryl, C6-20 substituted aryl, C2-20 heterocycle, and C2-20 substituted heterocycle, phosphonate, phosphate, polyethyleneoxy, a protecting group, etc.; and methods for viral inhibition are disclosed. The compds. include at least one phosphonate group covalently attached at any site.

IT **320-67-2**, 5-Azacytidine **2353-33-5**, 5-Aza-2'-deoxycytidine **62488-57-7**, 5,6-Dihydro-5-azacytidine
RL: BCP (Biochemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(preparation of pyrimidyl phosphonate **antiviral** compds. and methods of use)

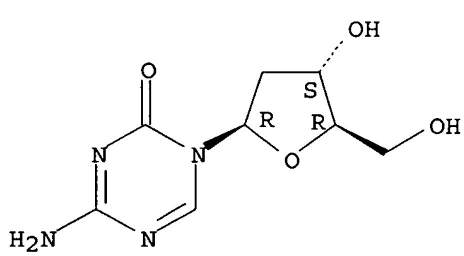
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



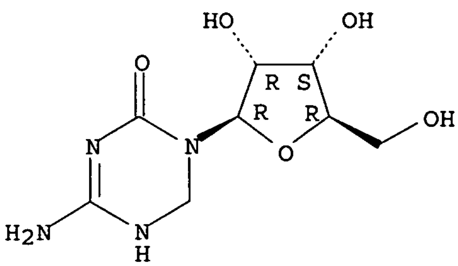
RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 62488-57-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 3 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:512844 HCAPLUS

DOCUMENT NUMBER: 143:259549

TITLE: Mechanism of action of a novel viral mutagenic covert nucleotide: molecular interactions with HIV-1 reverse transcriptase and host cell DNA polymerases

AUTHOR(S): Murakami, Eisuke; Basavapathruni, Aravind; Bradley, William D.; Anderson, Karen S.

CORPORATE SOURCE: Department of Pharmacology, Yale University School of Medicine, New Haven, CT, 06520-8066, USA

SOURCE: Antiviral Research (2005), 67(1), 10-17
CODEN: ARSRDR; ISSN: 0166-3542

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

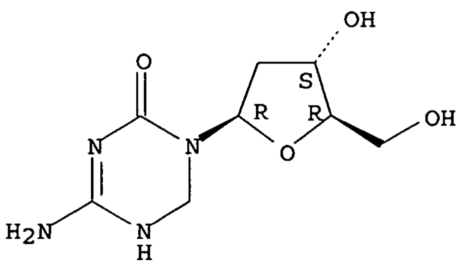
AB A novel non-chain terminating nucleoside analog anti-HIV inhibitor, KP-1212 has been designed to form base pairs with multiple bases that may lead to mutagenesis in the HIV-1 viral genome. After multiple replication cycles, the accumulation of mutations surpasses a crucial threshold beyond which the virus can no longer replicate. HIV-1 reverse transcriptase (RT) incorporates the KP-1212 monophosphate into the genome during viral replication after metabolic activation of the KP-1212 nucleoside to the triphosphate. The propensity for forming alternate base pairs with the KP-1212 nucleotide leads to mismatched nucleotides and the subsequent misincorporation is the basis for the inhibitory activity. The results showed that HIV-1 RT and human mitochondrial DNA polymerase (Pol γ) incorporated KP-1212-TP with a significant level of efficiency, whereas mouse DNA polymerase β (Pol β) did not. Misincorporation studies suggest that both HIV-1 RT and Pol γ may cause mutations at significantly high rates. These in vitro data confirm the mechanistic basis of KP-1212 as a viral mutagen but suggest that there may be a potential for toxicity to the mitochondria.

IT **114522-16-6**, KP 1212
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mechanism of action of **antiviral** mutagenic KP-1212)

RN 114522-16-6 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)-3,6-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 4 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:185375 HCAPLUS
DOCUMENT NUMBER: 142:254563
TITLE: Antimetabolite antiviral dosing regimen for hepatitis C virus or flaviviridae therapy
INVENTOR(S): Stuyver, Lieven J.
PATENT ASSIGNEE(S): Belg.
SOURCE: U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005049220	A1	20050303	US 2004-921052		20040818
PRIORITY APPLN. INFO.:			US 2003-496202P	P	20030818

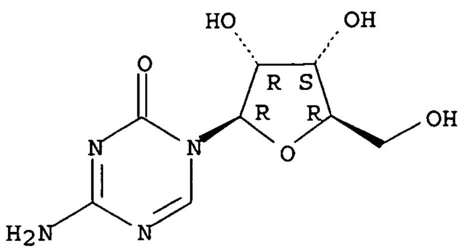
AB An anti-hepatitis C agent which is an antimetabolite to the host and cannot be administered on a daily or chronic basis as is usual in antiviral therapy (referred to below as an "anti-HCV antimetabolite"), can be administered using a traditional anticancer dosing regimen (for example via i.v. or parenteral injection), over a period of 1-7 days followed by cessation of therapy until rebound of the viral load is noted. This dosing regimen runs counter to conventional antiviral experience, wherein effective agents are usually administered over at least fourteen days of sustained therapy, and typically on an indefinite daily basis.

IT **320-67-2**, 5-Azacytidine **2353-33-5**, Decitabine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antimetabolite **antiviral** dosing regimen for hepatitis C virus or flaviviridae therapy)

RN 320-67-2 HCAPLUS

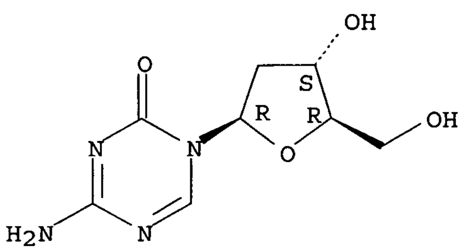
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 5 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2005:177803 HCAPLUS
DOCUMENT NUMBER:	142:254560
TITLE:	Antimetabolite antiviral dosing regimen for hepatitis C virus or flaviviridae therapy
INVENTOR(S):	Stuyver, Lieven J.
PATENT ASSIGNEE(S):	Pharmasset, Inc., USA
SOURCE:	PCT Int. Appl., 61 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005018330	A1	20050303	WO 2004-US26686	20040817

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-496202P P 20030818

AB An anti-hepatitis C agent which is an anti-metabolite to the host and

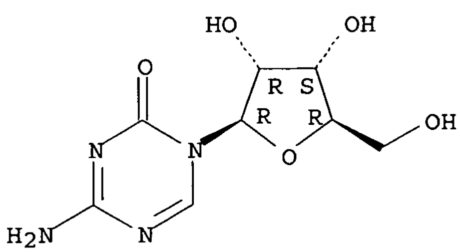
cannot be administered on a daily or chronic basis as is usual in anti-viral therapy (referred to below as an "anti-HCV anti-metabolite"), can be administered using a traditional anti-cancer dosing regimen (for example via i.v. or parenteral injection), over a period of 1-7 days followed by cessation of therapy until rebound of the viral load is noted. This dosing regimen runs counter to conventional antiviral experience, wherein effective agents are usually administered over at least fourteen days of sustained therapy, and typically on an indefinite daily basis.

IT **320-67-2**, 5-Azacytidine **2353-33-5**, Decitabine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antimetabolite **antiviral** dosing regimen for hepatitis C virus or flaviviridae therapy)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

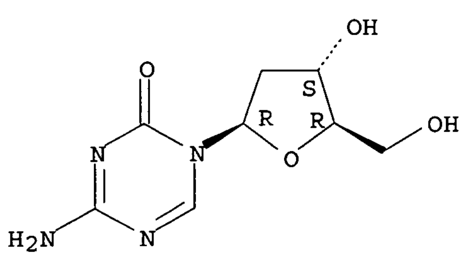
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

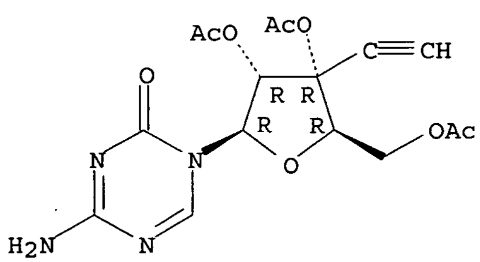
L30 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:69150 HCAPLUS
DOCUMENT NUMBER: 142:336570
TITLE: Synthesis and biological evaluation of nucleobase-modified analogs of the anticancer compounds 3'-C-ethynyluridine (EUrd) and 3'-C-ethynylcytidine (ECyd)
AUTHOR(S): Hrdlicka, Patrick J.; Jepsen, Jan S.; Nielsen, Claus; Wengel, Jesper
CORPORATE SOURCE: Nucleic Acid Center, Department of Chemistry,

University of Southern Denmark, Odense M, DK-5230, Den.
SOURCE: Bioorganic & Medicinal Chemistry (2005), 13(4), 1249-1260
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:336570

AB A series of nucleobase-modified analogs of the anticancer compds. 3'-C-ethynyluridine (EUrd) and 3'-C-ethynylcytidine (ECyd) were designed to overcome the strict substrate specificity of the activating uridine-cytidine kinase. EUrd, ECyd and target nucleosides were obtained using a short convergent synthetic route utilizing diacetone-α-D-glucose as starting material. 5-Iodo-substituted EUrd was the most potent inhibitor among the novel nucleobase-modified analogs in in vitro assays against human adenocarcinoma breast and prostate cancer cells with IC50 values down to 35 nM.

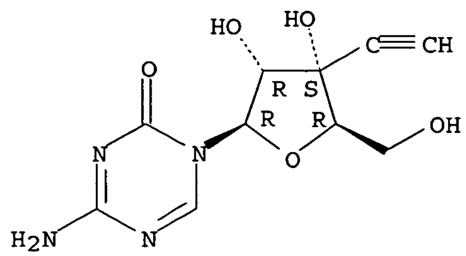
IT **848644-46-2P**
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(preparation, **antiviral** and antitumor activities of nucleobase-modified analogs of 3'-C-ethynyluridine and 3'-C-ethynylcytidine)
RN 848644-46-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2,3,5-tri-O-acetyl-3-C-ethynyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **848644-56-4P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation, **antiviral** and antitumor activities of nucleobase-modified analogs of 3'-C-ethynyluridine and 3'-C-ethynylcytidine)
RN 848644-56-4 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(3-C-ethynyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 7 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:49312 HCAPLUS
DOCUMENT NUMBER: 142:232193
TITLE: Action of mutagenic agents and antiviral inhibitors on foot-and-mouth disease virus
AUTHOR(S): Pariente, Nonia; Sierra, Saleta; Airaksinen, Antero
CORPORATE SOURCE: Centro de Biologia Molecular "Severo Ochoa" (CSIC-UAM), Universidad Autonoma de Madrid, Madrid, Cantoblanco, 28049, Spain
SOURCE: Virus Research (2005), 107(2), 183-193
CODEN: VIREDF; ISSN: 0168-1702
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

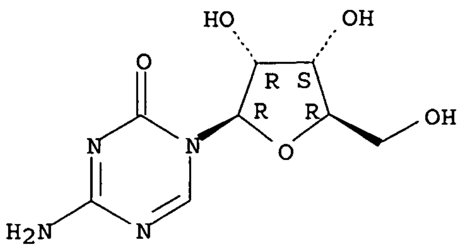
AB A review. The current knowledge on foot-and-mouth disease virus (FMDV) entry into error catastrophe is reviewed. FMDV can establish cytolytic and persistent infections in the field and in cell culture. Both types of FMDV infection in cell culture can be treated with mutagens, with or without classical (non-mutagenic) antiviral inhibitors, to drive the virus to extinction. 5-Fluorouracil (FU) and 5-azacytidine (AZC) were employed as mutagenic agents to treat cytolytic FMDV infections, and ribavirin (Rib) to treat persistent infections. Extinction is dependent on the relative fitness of the viral isolate, as well as on the viral load. In cytolytic infections, extinctions could be efficiently obtained with combinations of mutagens and inhibitors. High-fitness FMDV extinction could only be achieved with treatments that contained a mutagen, and not with combinations of inhibitors that exerted the same antiviral effect. Persistent infections could be cured with Rib treatment alone. The results presented here show entry into error catastrophe as a valid strategy for treatment of viral infections, although much work remains to be done before it can be implemented.

IT **320-67-2**, 5-Azacytidine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(action of mutagenic agents and **antiviral** inhibitors on foot-and-mouth disease virus)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 94 THERE ARE 94 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:113472 HCAPLUS
DOCUMENT NUMBER: 140:175116
TITLE: Method for treating T-lineage leukemias and lymphomas using a CD7-specific monoclonal antibody (TXU-7) linked to the pokeweed antiviral protein (PAP)
INVENTOR(S): Uckun, Fatih M.
PATENT ASSIGNEE(S): Regents of the University of Minnesota, USA
SOURCE: U.S., 29 pp., Cont.-in-part of U.S. Ser. No. 14,028. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

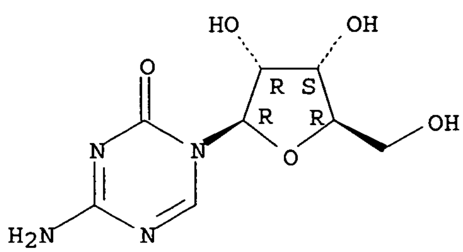
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6689362	B1	20040210	US 1999-453641		19991203
US 6372217	B1	20020416	US 1998-14028		19980127
PRIORITY APPLN. INFO.:			US 1997-48364P	P	19970603
			US 1998-14028	A2	19980127

AB Acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) are common leukemias in both children and adults. Current treatment strategies are inadequate and often result in patient toxicity and relapse. Accordingly, the need exists for a T-cell-specific immunotoxin with sufficient stability and efficacy to eliminate cell populations associated with various T-cell malignancies. The invention addresses this concern by providing a biotherapeutic agent (e.g., an immunoconjugate or immunotoxin) comprising a monoclonal antibody (MoAb TXU-7; specific to mammalian T-cell/myeloid antigen CD7) linked to the pokeweed antiviral protein (PAP). The CD7 antigen is expressed on human T-lineage lymphoid cells and leukemic progenitor cells in T-lineage lymphoid malignancies. PAP is a member of the hemitoxin group of toxins and inactivates ribosomes by the removal of a single adenosine from the conserved loop sequence found near the 3' terminus of all larger RNAs. This specific depurination abrogates the ability of elongation factors to interact with ribosomes and results in irreversible shut-down of protein synthesis. The PAP toxin was linked to the TXU-7 Mab to produce a TXU-7-PAP immunoconjugate. This immunotoxin is stable in vivo and effective in killing and eliminating CD7-expressing T-lineage leukemic cells. Antiviral activity (against HIV-1) of the conjugate is also included.

IT **320-67-2**, 5-Azacytidine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(CD7-specific monoclonal antibody linked to pokeweed **antiviral**

protein for treating T-lineage leukemias and lymphomas, and use with other agents)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:458415 HCAPLUS
DOCUMENT NUMBER: 138:100377
TITLE: Identification of active antiviral compounds against a New York isolate of West Nile virus
AUTHOR(S): Morrey, John D.; Smee, Donald F.; Sidwell, Robert W.; Tseng, Christopher
CORPORATE SOURCE: Department of Animal, Dairy, and Veterinary Sciences, Institute for Antiviral Research, Utah State University, Logan, UT, 84322-4700, USA
SOURCE: Antiviral Research (2002), 55(1), 107-116
CODEN: ARSRDR; ISSN: 0166-3542
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The recent West Nile virus (WNV) outbreak in the United States has increased the need to identify effective therapies for this disease. A chemotherapeutic approach may be a reasonable strategy because the virus infection is typically not chronic and antiviral drugs have been identified to be effective in vitro against other flaviviruses. A panel of 34 substances was tested against infection of a recent New York isolate of WNV in Vero cells and active compds. were also evaluated in MA-104 cells. Some of these compds. were also evaluated in Vero cells against the 1937 Uganda isolate of the WNV. Six compds. were identified to be effective against virus-induced CPE with 50% effective concns. (EC50) less than 10 μg/mL and with a selectivity index (SI) of greater than 10. Known inhibitors of orotidine monophosphate decarboxylase and inosine monophosphate dehydrogenase involved in the synthesis of GTP, UTP, and TTP were most effective. The compds. 6-azauridine, 6-azauridine triacetate, cyclopententylcytosine (CPE-C), mycophenolic acid and pyrazofurin appeared to have the greatest activities against the New York isolate, followed by 2-thio-6-azauridine. Anti-WNV activity of 6-azauridine was confirmed by virus yield reduction assay when the assay was performed 2 days after initial infection in Vero cells. The neutral red assay mean EC50 of ribavirin was only 106 μg/mL with a mean SI of 9.4 against the New York isolate and only slightly more effective against the Uganda isolate. There were some differences in the drug sensitivities of the New York and Uganda isolates, but when comparisons were made by categorizing drugs according to their

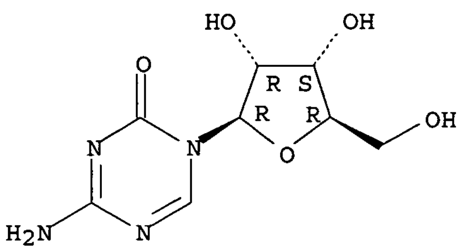
modes of action, similarities of activities between the two isolates were identified.

IT 320-67-2, 5-Azacytidine 62488-57-7
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(identification of active **antiviral** compds. against a New York isolate of West Nile virus)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

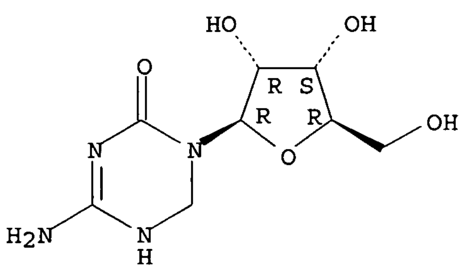
Absolute stereochemistry.



RN 62488-57-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2000:894112 HCAPLUS
DOCUMENT NUMBER:	134:147795
TITLE:	Unnatural enantiomers of 5-azacytidine analogs: syntheses and enzymic properties
AUTHOR(S):	Gaubert, Gilles; Mathe, Christophe; Imbach, Jean-Louis; Eriksson, Staffan; Vincenzetti, Silvia; Salvatori, Daniela; Vita, Alberto; Maury, Georges
CORPORATE SOURCE:	UMR 5625 du CNRS, Departement de Chimie, Universite Montpellier II, Montpellier, 34095, Fr.
SOURCE:	European Journal of Medicinal Chemistry (2000), 35(11), 1011-1019 CODEN: EJMCA5; ISSN: 0223-5234
PUBLISHER:	Editions Scientifiques et Medicales Elsevier
DOCUMENT TYPE:	Journal
LANGUAGE:	English

OTHER SOURCE(S): CASREACT 134:147795

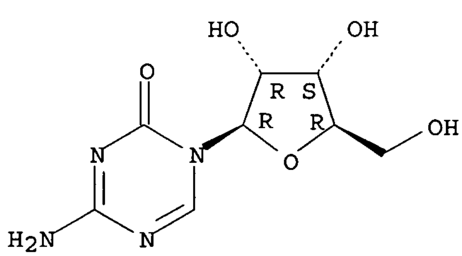
AB Although 2'-deoxy-β-D-5-azacytidine (Decitabine) and β-D-5-azacytidine display potent antileukemic properties, their therapeutic use is hampered by their sensitivity to nucleophiles and to deamination catalyzed by cytidine deaminase. As shown earlier β-L-enantiomers of cytidine derivs. are resistant to cytidine deaminase. We thus synthesized several 5-azacytosine β-L-nucleoside analogs to evaluate their enzymic and biol. properties. 2'-Deoxy-β-L-5-azacytidine (L-Decitabine), β-L-5-azacytidine, 1-(β-L-xylo-furanosyl)5-azacytosine, and 1-(2-deoxy-β-L-threo-pentofuranosyl)5-azacytosine were stereospecifically prepared starting from L-ribose and L-xylose. D- and L-enantiomers of 2'-deoxy-β-5-azacytidine were weak substrates of human recombinant deoxycytidine kinase (dCK) compared to β-D-deoxycytidine, whereas both enantiomers of β-5-azacytidine or the L-xylo-analogs were not substrates of the enzyme. As expected, none of the presently reported derivs. of β-L-5-azacytidine was a substrate of human recombinant cytidine deaminase (CDA). The prepared compds. were tested for their activity against HIV and HBV and they did not show any significant activity or cytotoxicity. In the case of L-Decitabine, this suggests that the enantioselectivities of concerned enzymes other than dCK and CDA might not be favorable.

IT **320-67-2 2353-33-5**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(syntheses, enzymic phosphorylation, and **antiviral** activity of unnatural enantiomers of azacytidine analogs)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

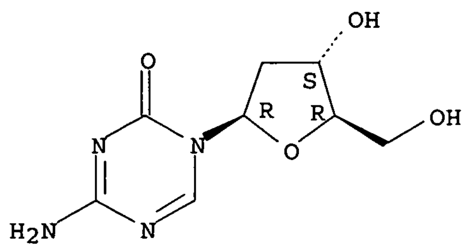
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

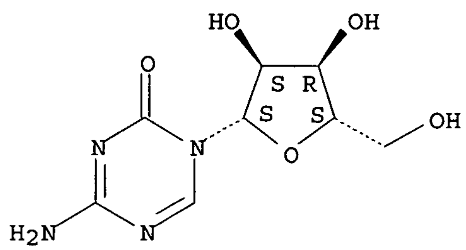
Absolute stereochemistry.



IT **206269-46-7P 324018-57-7P 324018-58-8P**
324018-59-9P
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(syntheses, enzymic phosphorylation, and **antiviral** activity of unnatural enantiomers of azacytidine analogs)

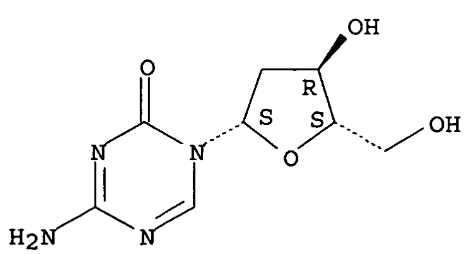
RN 206269-46-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-L-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



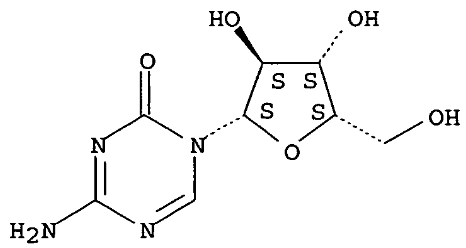
RN 324018-57-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-L-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



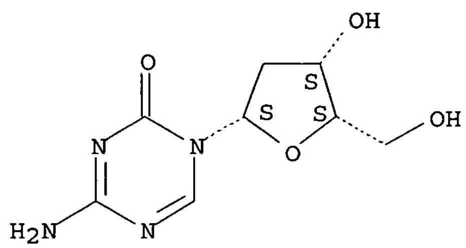
RN 324018-58-8 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-L-xylofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



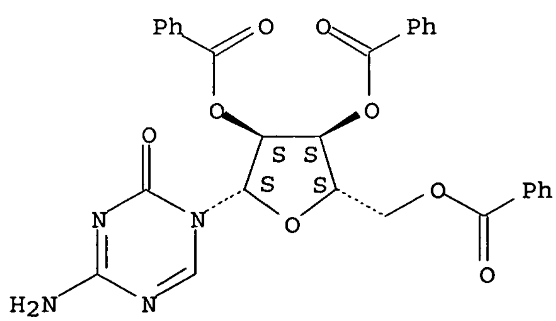
RN 324018-59-9 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-L-threo-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



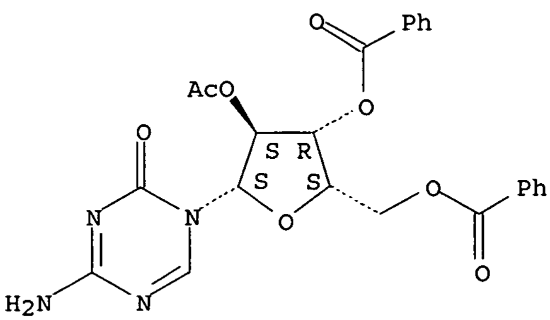
IT **206269-45-6P 324018-61-3P 324018-62-4P**
324018-64-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(syntheses, enzymic phosphorylation, and **antiviral** activity of unnatural enantiomers of azacytidine analogs)
RN 206269-45-6 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2,3,5-tri-O-benzoyl-β-L-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



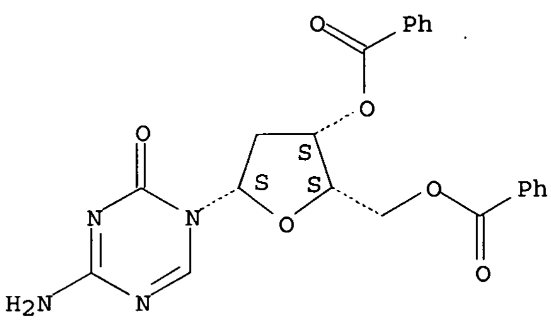
RN 324018-61-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 1-(2-O-acetyl-3,5-di-O-benzoyl-β-L-xylofuranosyl)-4-amino- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



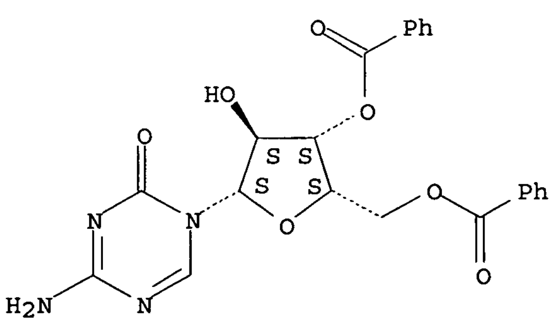
RN 324018-62-4 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(3,5-di-O-benzoyl-2-deoxy-β-L-threo-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 324018-64-6 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(3,5-di-O-benzoyl-β-L-xylofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 11 OF 30 HCAPLUS
ACCESSION NUMBER: 2000:642421 HCAPLUS
DOCUMENT NUMBER: 133:305319
TITLE: Response of foot-and-mouth disease virus to increased mutagenesis: influence of viral load and fitness in

loss of infectivity
AUTHOR(S): Sierra, Saleta; Davila, Mercedes; Lowenstein, Pedro R.; Domingo, Esteban
CORPORATE SOURCE: Centro de Biologia Molecular Severo Ochoa, Universidad Autonoma de Madrid, Madrid, 28049, Spain
SOURCE: Journal of Virology (2000), 74(18), 8316-8323
CODEN: JOVIAM; ISSN: 0022-538X
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

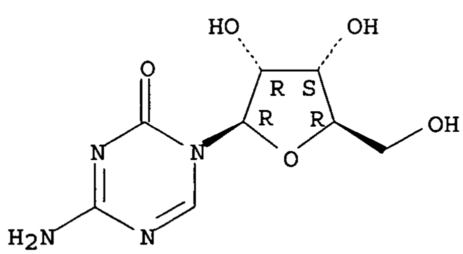
AB Passage of foot-and-mouth disease virus (FMDV) in cell culture in the presence of the mutagenic base analog 5-fluorouracil or 5-azacytidine resulted in decreases of infectivity and occasional extinction of the virus. Low viral loads and low viral fitness enhanced the frequency of extinction events; this finding was shown with a number of closely related FMDV clones and populations differing by ≤106-fold in relative fitness in infections involving either single or multiple passages in the absence or presence of the chemical mutagens. The mutagenic treatments resulted in increases of 2- to 6.4-fold in mutation frequency and ≤3-fold in mutant spectrum complexity. The largest increase observed corresponded to the 3D (polymerase)-coding region, which is highly conserved in nonmutagenized FMDV populations. As a result, nucleotide sequence heterogeneity for the 3D-coding region became very similar to that for the variable VP1-coding region in FMDVs multiply passaged in the presence of chemical mutagens. The results suggest that strategies to combine redns. of viral load and viral fitness could be effectively associated with extinction mutagenesis as a potential new antiviral strategy.

IT **320-67-2**, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(response of foot-and-mouth disease virus to increased mutagenesis and influence of viral load and fitness in loss of infectivity in relation to **antiviral** activity)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 12 OF 30 HCAPLUS
ACCESSION NUMBER: 1999:670113 HCAPLUS
DOCUMENT NUMBER: 131:281604
TITLE: Treatment of chemotherapeutic agent and antiviral agent toxicity with acylated pyrimidine nucleosides
INVENTOR(S): Von Borstel, Reid; Bamat, Michael K.

PATENT ASSIGNEE(S): Pro-Neuron, Inc., USA
SOURCE: U.S., 31 pp., Cont.-in-part U. S. Ser. 176,485.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5968914	A	19991019	US 1995-472210	19950607
EP 712629	A1	19960522	EP 1995-203050	19881027
EP 712629	B1	20030618		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 10001436	A2	19980106	JP 1997-36734	19881027
JP 3474073	B2	20031208		
JP 2001192335	A2	20010717	JP 2000-379524	19881027
CA 2111571	AA	19930121	CA 1992-2111571	19920625
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CA 2504078	AA	19930121	CA 1992-2504078	19920625
ES 2160579	T3	20011116	ES 1992-914215	19920625
ZA 9204975	A	19930428	ZA 1992-4975	19920703
IN 175688	A	19950812	IN 1992-CA473	19920706
US 5246708	A	19930921	US 1992-911379	19920713
US 5470838	A	19951128	US 1992-997657	19921230
US 5583117	A	19961210	US 1993-140475	19931025
US 6020320	A	20000201	US 1993-153163	19931117
US 5736531	A	19980407	US 1993-176485	19931230
IN 177670	A	19970215	IN 1994-CA701	19940902
US 5770582	A	19980623	US 1995-419767	19950410
US 5691320	A	19971125	US 1995-465454	19950605
US 6054441	A	20000425	US 1995-463790	19950605
US 6060459	A	20000509	US 1995-465016	19950605
US 6258795	B1	20010710	US 1995-466145	19950606
US 6316426	B1	20011113	US 1995-466144	19950606
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AU 9661114	A1	19961230	AU 1996-61114	19960606
AU 724805	B2	20000928		
EP 831849	A1	19980401	EP 1996-918461	19960606
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
CN 1192149	A	19980902	CN 1996-195929	19960606
JP 10511689	T2	19981110	JP 1997-502184	19960606
JP 2003201240	A2	20030718	JP 2003-721	19960606
EP 1491201	A1	20041229	EP 2004-23557	19960606
EP 1491201	B1	20060322		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, AL				
US 2001025032	A1	20010927	US 1999-249790	19990216

	US 6344447	B2	20020205			
	AU 9952624	A1	19991202	AU 1999-52624		19991001
	US 6743782	B1	20040601	US 2000-494242		20000131
	US 2004033981	A1	20040219	US 2003-601863		20030624
	US 2004192635	A1	20040930	US 2004-824501		20040415
	US 2004220134	A1	20041104	US 2004-855835		20040528
	AU 2005232288	A1	20051201	AU 2005-232288		20051110
PRIORITY APPLN. INFO.:				US 1987-115923	B2	19871028
				US 1987-115929	B2	19871028
				US 1989-438493	B2	19890627
				US 1990-487984	B2	19900205
				US 1991-724340	B2	19910705
				US 1992-903107	B2	19920625
				US 1993-61381	B2	19930514
				US 1993-176485	A2	19931230
				US 1988-186031	B2	19880425
				EP 1988-910239	A3	19881027
				JP 1988-509176	A3	19881027
				JP 1994-303877	A3	19881027
				US 1989-341925	B1	19890421
				US 1990-533933	B1	19900605
				US 1990-438493	B2	19900626
				US 1991-653882	B2	19910208
				US 1991-737913	B3	19910729
				CA 1992-2111571	A3	19920625
				IN 1992-CA473	A1	19920706
				US 1992-911379	A3	19920713
				US 1992-925931	B2	19920807
				US 1992-958598	B3	19921007
				US 1992-987730	B2	19921208
				US 1992-997657	A3	19921230
				US 1993-96407	B1	19930726
				US 1993-98884	B1	19930729
				US 1993-153163	A1	19931117
				US 1993-158799	B2	19931201
				US 1994-266897	B3	19940701
				US 1994-289214	A3	19940812
				US 1995-419767	A3	19950410
				US 1995-463740	A1	19950605
				US 1995-472210	A	19950607
				AU 1995-29150	A3	19950630
				EP 1996-918461	A3	19960606
				JP 1997-502184	A3	19960606
				WO 1996-US10067	W	19960606
				US 2000-494242	A3	20000131
				AU 2002-320811	A3	20021223

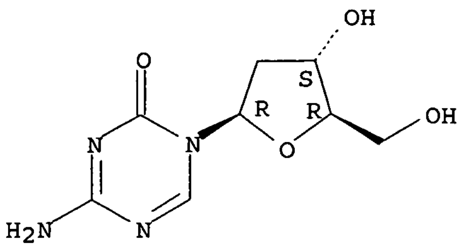
AB Compds., compns., and methods are disclosed for treatment and prevention of toxicity due to chemotherapeutic agents and antiviral agents. Disclosed are acylated derivs. of nonmethylated pyrimidine nucleosides. These compds. are capable of attenuating damage to the hematopoietic system in animals receiving antiviral or antineoplastic chemotherapy.

IT **2353-33-5**, 5-Aza-2'-deoxycytidine **65886-71-7**
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(treatment of chemotherapeutic agent and **antiviral** agent toxicity with acylated pyrimidine nucleosides)

RN 2353-33-5 HCAPLUS

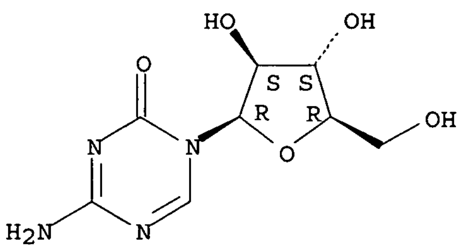
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65886-71-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:137920 HCAPLUS
DOCUMENT NUMBER: 130:223533
TITLE: Synthesis of 2'-methylene-substituted 5-azapyrimidine, 6-azapyrimidine, and 3-deazaguanine nucleoside analogs as potential antitumor/antiviral agents
AUTHOR(S): Liu, Mao-Chin; Luo, Mei-Zhen; Mozdziesz, Diane E.; Lin, Tai-Shun; Dutschman, Ginger E.; Cheng, Yung-Chi; Sartorell, Alan C.
CORPORATE SOURCE: Department of Pharmacology and Developmental Therapeutics Section, Cancer Center, Yale University School of Medicine, New Haven, CT, 06520-8066, USA
SOURCE: Nucleosides & Nucleotides (1999), 18(1), 55-72
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 2'-Deoxy-2'-methylene-6-azauridine and 2'-deoxy-2'-methylene-6-azacytidine have been synthesized via a multi-step procedure from 6-azauridine. 2'-deoxy-2'-methylene-5-azacytidine and 2'-deoxy-2'-methylene-3-deazaguanosine and their corresponding α-anomers have been synthesized by the transglycosidation of 3',5'-O-(1,1,3,3-tetraisopropyldisiloxane-1,3-diyl)-2'-deoxy-2'-methyleneuridine with silylated 5-azacytosine and silylated N2-palmitoyl-3-deazaguanine, resp., in the presence of trimethylsilyl trifluoromethanesulfonate as the catalyst in anhydrous dichloroethane, followed by separation of the isomers and

deprotection of the blocking groups. These compds. were tested for cytotoxicity against B16F10, L1210, and CCRF-CEM tumor cell lines and for antiviral activity against HIV-1, HSV-1, and HSV-2.

IT **221171-50-2P 221171-51-3P**

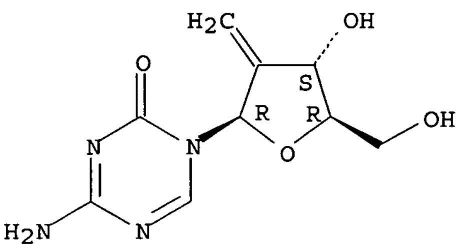
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(Synthesis of 2'-methylene-substituted 5-azapyrimidine, 6-azapyrimidine, and 3-deazaguanine nucleoside analogs as potential antitumor/**antiviral** agents)

RN 221171-50-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-2-methylene-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

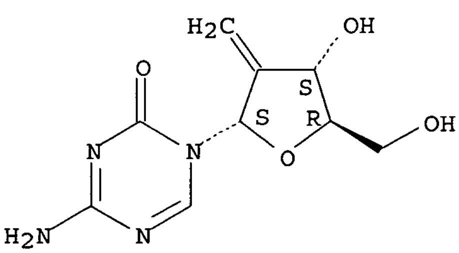
Absolute stereochemistry.



RN 221171-51-3 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-2-methylene-α-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:813715 HCAPLUS

DOCUMENT NUMBER: 130:57175

TITLE: TXU-7-pokeweed antiviral protein immunotoxin and antiviral and antitumor uses thereof

INVENTOR(S): Uckun, Faith M.

PATENT ASSIGNEE(S): Regents of the University of Minnesota, USA

SOURCE: PCT Int. Appl., 78 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9855150	A1	19981210	WO 1998-US11287		19980603
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
US 6372217	B1	20020416	US 1998-14028		19980127
CA 2292426	AA	19981210	CA 1998-2292426		19980603
AU 9877188	A1	19981221	AU 1998-77188		19980603
EP 996467	A1	20000503	EP 1998-925178		19980603
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
JP 2002511753	T2	20020416	JP 1999-502746		19980603
PRIORITY APPLN. INFO.:			US 1997-48364P	P	19970603
			US 1998-14028	A2	19980127
			WO 1998-US11287	W	19980603

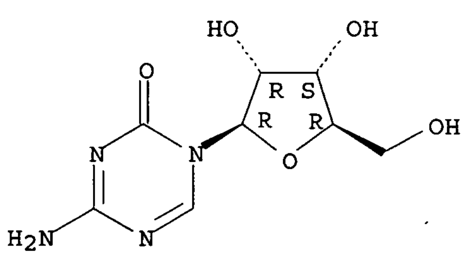
AB Immunotoxins comprising the monoclonal antibody TXU-7 linked to an amount of pokeweed antiviral protein are provided which are effective for the treatment of T-cell leukemias, lymphomas, acute myeloid leukemias and viral infections, e.g., HIV infection.

IT **320-67-2**, 5-Azacytidine
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(TXU-7-pokeweed **antiviral** protein immunotoxin and **antiviral** and antitumor uses thereof)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

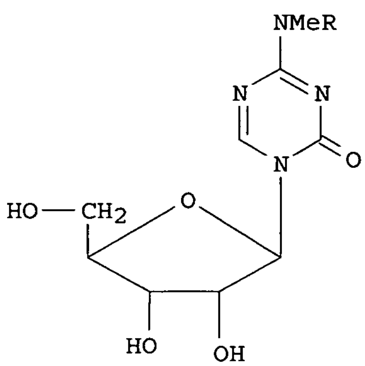
Absolute stereochemistry.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:435622 HCAPLUS
DOCUMENT NUMBER: 129:189591
TITLE: Synthesis and biological activity of N4-methyl-5-azacytidines
AUTHOR(S): Hanna, Naeem B.; Masojidkova, Milena; Piskala, Alois
CORPORATE SOURCE: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, 166 10/6, Czech Rep.

SOURCE: Collection of Czechoslovak Chemical Communications (1998), 63(5), 713-722
CODEN: CCCCAK; ISSN: 0010-0765
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

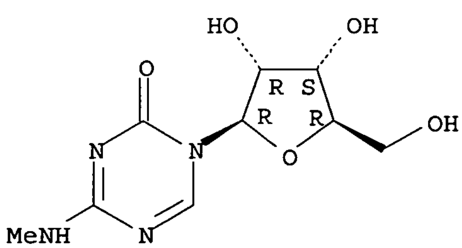
AB N4-methyl-5-azacytidines I (R = H, Me) were prepared via glycosidation silylated N4-methyl- or N4,N4-dimethyl-5-azacytosines with 2,3,5-tri-O-benzoyl-α,β-D-ribofuranosyl chloride. I exhibited a lower antibacterial, antitumor and antiviral activity than the unsubstituted 5-azacytidine.

IT **27826-76-2P 27826-77-3P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis, antibacterial, antitumor, and **antiviral** activity of N4-methyl-5-azacytidines)

RN 27826-76-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

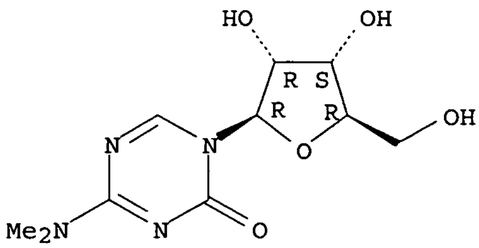
Absolute stereochemistry. Rotation (+).



RN 27826-77-3 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-(dimethylamino)-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

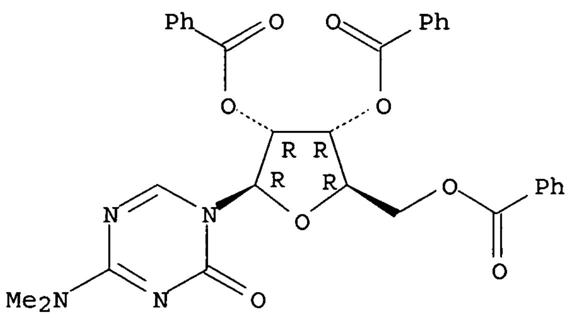


IT 97818-28-5P 211695-85-1P 211695-93-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis, antibacterial, antitumor, and **antiviral** activity of N4-methyl-5-azacytidines)

RN 97818-28-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-(dimethylamino)-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

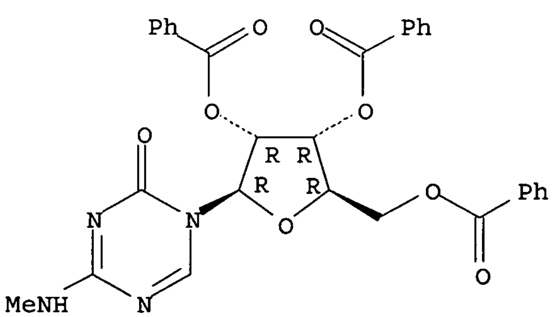
Absolute stereochemistry. Rotation (-).



RN 211695-85-1 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

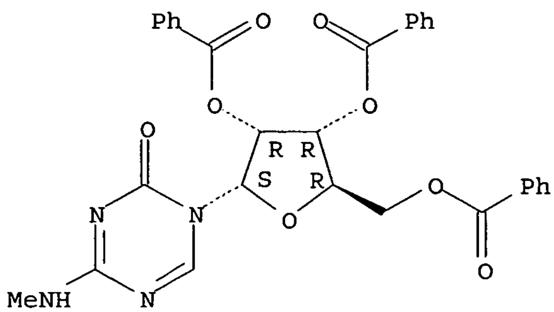
Absolute stereochemistry.



RN 211695-93-1 HCAPLUS

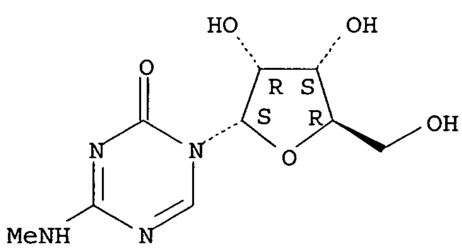
CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-(2,3,5-tri-O-benzoyl-α-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 211695-95-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis, antibacterial, antitumor, and **antiviral** activity of N4-methyl-5-azacytidines)
RN 211695-95-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-α-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:236253 HCAPLUS
DOCUMENT NUMBER: 128:266247
TITLE: Compositions of chemotherapeutic agent or antiviral agent with acylated pyrimidine nucleosides
INVENTOR(S): Von Borstel, Reid W.; Bamat, Michael K.
PATENT ASSIGNEE(S): Pro-Neuron, Inc., USA
SOURCE: U.S., 26 pp., Cont.-in-part of U.S. Ser. No. 61,381, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5736531	A	19980407	US 1993-176485	19931230
EP 712629	A1	19960522	EP 1995-203050	19881027
EP 712629	B1	20030618		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 10001436	A2	19980106	JP 1997-36734	19881027
JP 3474073	B2	20031208		

JP 2001192335	A2	20010717	JP 2000-379524	19881027
CA 2111571	AA	19930121	CA 1992-2111571	19920625
CA 2111571	C	20050823		
CA 2504078	AA	19930121	CA 1992-2504078	19920625
ES 2160579	T3	20011116	ES 1992-914215	19920625
ZA 9204975	A	19930428	ZA 1992-4975	19920703
IN 175688	A	19950812	IN 1992-CA473	19920706
US 5246708	A	19930921	US 1992-911379	19920713
US 5470838	A	19951128	US 1992-997657	19921230
US 5583117	A	19961210	US 1993-140475	19931025
US 6020320	A	20000201	US 1993-153163	19931117
IN 177670	A	19970215	IN 1994-CA701	19940902
US 5770582	A	19980623	US 1995-419767	19950410
US 5691320	A	19971125	US 1995-465454	19950605
US 6054441	A	20000425	US 1995-463790	19950605
US 6060459	A	20000509	US 1995-465016	19950605
US 6258795	B1	20010710	US 1995-466145	19950606
US 6316426	B1	20011113	US 1995-466144	19950606
US 5968914	A	19991019	US 1995-472210	19950607
US 6232298	B1	20010515	US 1995-479519	19950607
US 6274563	B1	20010814	US 1995-479349	19950607
US 6348451	B1	20020219	US 1995-478736	19950607
US 6919320	B1	20050719	US 1995-473331	19950607
US 2001025032	A1	20010927	US 1999-249790	19990216
US 6344447	B2	20020205		
AU 9952624	A1	19991202	AU 1999-52624	19991001
US 6743782	B1	20040601	US 2000-494242	20000131
US 2004033981	A1	20040219	US 2003-601863	20030624
US 2004192635	A1	20040930	US 2004-824501	20040415
US 2004220134	A1	20041104	US 2004-855835	20040528
AU 2005232288	A1	20051201	AU 2005-232288	20051110

PRIORITY APPLN. INFO.:

US 1987-115923	B2	19871028
US 1987-115929	B2	19871028
US 1989-438493	B2	19890627
US 1990-487984	B2	19900205
US 1991-724340	B2	19910705
US 1992-903107	B2	19920625
US 1993-61381	B2	19930514
US 1988-186031	B2	19880425
EP 1988-910239	A3	19881027
JP 1988-509176	A3	19881027
JP 1994-303877	A3	19881027
US 1989-341925	B1	19890421
US 1990-533933	B1	19900605
US 1990-438493	B2	19900626
US 1991-653882	B2	19910208
US 1991-737913	B3	19910729
CA 1992-2111571	A3	19920625
IN 1992-CA473	A1	19920706
US 1992-911379	A3	19920713
US 1992-925931	B2	19920807
US 1992-958598	B3	19921007
US 1992-987730	B2	19921208
US 1992-997657	A3	19921230
US 1993-96407	B1	19930726
US 1993-98884	B1	19930729
US 1993-153163	A1	19931117
US 1993-158799	B2	19931201
US 1993-176485	A2	19931230
US 1994-266897	B3	19940701

US 1994-289214	A3	19940812
US 1995-419767	A3	19950410
US 1995-463740	A1	19950605
US 1995-472210	A1	19950607
AU 1995-29150	A3	19950630
US 2000-494242	A3	20000131
AU 2002-320811	A3	20021223

OTHER SOURCE(S): MARPAT 128:266247

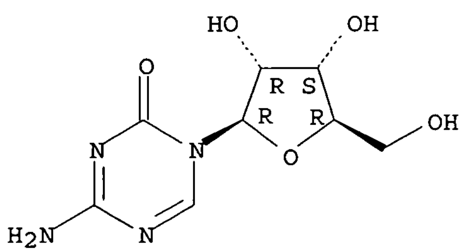
AB The subject invention discloses compds., compns. and methods for treatment and prevention of toxicity due to chemotherapeutic agents and antiviral agents. Disclosed are acylated derivs. of non-methylated pyrimidine nucleosides. These compds. are capable of attenuating damage to the hematopoietic system in animals receiving antiviral or antineoplastic chemotherapy. Thus, biol activity of 5-fluorouracil is reported.

IT **320-67-2**, 5-Azacytidine **2353-33-5**, 5-Aza-2'-deoxycytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compns. of chemotherapeutic agent or **antiviral** agent with acylated pyrimidine nucleosides)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

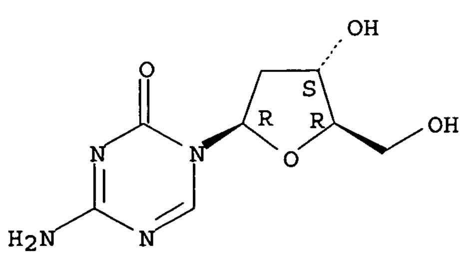
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:141015 HCAPLUS

DOCUMENT NUMBER: 126:139905
TITLE: Methods of reducing toxicity of chemotherapeutic and antiviral agents with acylated non-methylated pyrimidine nucleosides
INVENTOR(S): Vonborstel, Reid W.; Bamat, Michael K.
PATENT ASSIGNEE(S): Pro-Neuron, Inc., USA
SOURCE: PCT Int. Appl., 142 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9640165	A1	19961219	WO 1996-US10067	19960606
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
IN 177670	A	19970215	IN 1994-CA701	19940902
US 5968914	A	19991019	US 1995-472210	19950607
AU 9661114	A1	19961230	AU 1996-61114	19960606
AU 724805	B2	20000928		
EP 831849	A1	19980401	EP 1996-918461	19960606
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI				
JP 10511689	T2	19981110	JP 1997-502184	19960606
AU 9952624	A1	19991202	AU 1999-52624	19991001
AU 2005232288	A1	20051201	AU 2005-232288	20051110

PRIORITY APPLN. INFO.:

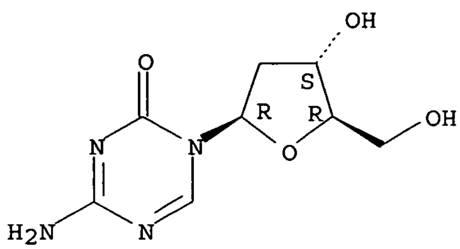
US 1995-472210	A	19950607
US 1987-115923	B2	19871028
US 1987-115929	B2	19871028
US 1989-438493	B2	19890627
US 1990-487984	B2	19900205
US 1991-724340	B2	19910705
US 1992-903107	B2	19920625
IN 1992-CA473	A1	19920706
US 1993-61381	B2	19930514
US 1993-176485	A2	19931230
AU 1995-29150	A3	19950630
WO 1996-US10067	W	19960606
AU 2002-320811	A3	20021223

AB Compds., compns. and methods are disclosed for the treatment and prevention of toxicity due to chemotherapeutic agents and antiviral agents. Disclosed are acylated derivs. of non-methylated pyrimidine nucleosides. These compds. are capable of attenuating damage to the hematopoietic system in animals receiving antiviral or antineoplastic chemotherapy. Oral administration of triacetyluridine ameliorated the hematol. toxicity of 5-fluorouracil. Triacetyluridine and uridine increased the therapeutic index of 5-fluorouracil in tumor-bearing mice. Amelioration of the adverse effects of e.g. AZT is also described.

IT **2353-33-5**, 5-Aza-2'-deoxycytidine **65886-71-7**
RL: ADV (Adverse effect, including toxicity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(acylated pyrimidine nucleosides, alone or in combination with other compds., for reducing toxicity of chemotherapeutic and **antiviral** agents)

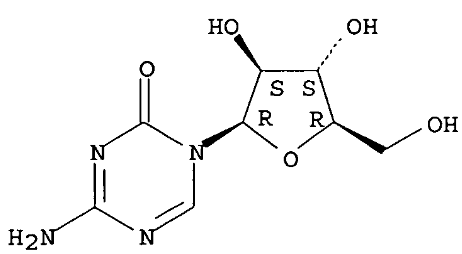
RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65886-71-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:756200 HCAPLUS
DOCUMENT NUMBER: 123:160865
TITLE: Acylated pyrimidine nucleosides for treatment of toxicity from chemotherapeutic and antiviral agents
INVENTOR(S): Von Borstel, Reid Warren; Bamat, Michael Kevin
PATENT ASSIGNEE(S): Pro-Neuron, Inc., USA
SOURCE: PCT Int. Appl., 143 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9426761	A1	19941124	WO 1993-US12689		19931230
W: AU, CA, JP, KR					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
AU 9460812	A1	19941212	AU 1994-60812		19931230
IN 177670	A	19970215	IN 1994-CA701		19940902
AU 9952624	A1	19991202	AU 1999-52624		19991001
AU 2005232288	A1	20051201	AU 2005-232288		20051110
PRIORITY APPLN. INFO.:			US 1993-61381	A	19930514
			IN 1992-CA473	A1	19920706

WO 1993-US12689 W 19931230
AU 1995-29150 A3 19950630
AU 2002-320811 A3 20021223

OTHER SOURCE(S): MARPAT 123:160865

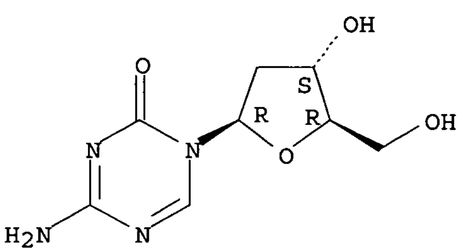
AB The subject invention discloses compds., compns. and methods for treatment and prevention of toxicity due to chemotherapeutic agents and antiviral agents. Disclosed are acylated derivs. of non-methylated pyrimidine nucleosides. These compds. are capable of attenuating damage to the hematopoietic system in animals receiving antiviral or antineoplastic chemotherapy. Oral administration of triacetyluridine ameliorated the hematol. toxicity of 5-fluorouracil. Effects of other derivs. are also presented. Synthesis of ethoxycarbonyluridine is included.

IT **2353-33-5 65886-71-7**
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(acylated pyrimidine nucleosides for treatment of toxicity from chemotherapeutic and **antiviral** agents)

RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

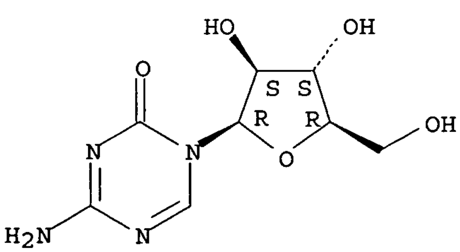
Absolute stereochemistry.



RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:631049 HCAPLUS

DOCUMENT NUMBER: 123:102091

TITLE: Studies of the pharmacokinetics and toxicology of 2',3'-dideoxy-β-L-5-fluorocytidine (β-L-FddC) and 2',3'-dideoxy-β-L-cytidine (β-L-ddC) in vivo; and synthesis and antiviral evaluations of 2',3'-dideoxy-β-L-5-azacytidine

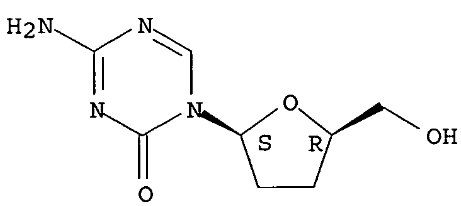
AUTHOR(S): Lin, Tai-shun; Guo, Xin; Luo, Mei-Zhen; Liu, Mao-Chin;

Zhu, Yong-Lian; Dutschman, Ginger E.; Pai, S.
Balakrishna; Li, Mao-Mi; Cheng, Yung-Chi
CORPORATE SOURCE: Dep. of Pharmacology, Yale Univ. Sch. of Medicine, New Haven, CT, 06520-8066, USA
SOURCE: Nucleosides & Nucleotides (1995), 14(3-5), 619-25
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Dekker
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 123:102091
AB The pharmacokinetics and toxicol. of 2',3'-dideoxy-β-L-5-fluorocytidine (β-L-FddC) and 2',3'-dideoxy-β-L-cytidine (β-L-ddC) in mice investigated. In addition, 2',3'-dideoxy-β-L-5-azacytidine (β-L-5-aza-ddC) and its α-L-anomer (α-L-5-aza-ddC) were synthesized by coupling the silylated 5-azacytosine derivative with 1-O-acetyl-5-O-(tert-butyldimethylsilyl)-2,3-dideoxy-L-ribofuranose, followed by separation of the α- and β-anomers and were evaluated in vitro against HBV and HIV. β-L-5-Aza-ddC was not cytotoxic to L1210, P388, S-180, and CCRF-CEM cells up to a concentration of 100 μM. Conversely, the α-L-anomer was not active against HBV at the same concentration

IT **162239-41-0P 162239-42-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(pharmacokinetics and toxicol. of dideoxyfluorocytidine and dideoxycytidine in vivo and synthesis and **antiviral** evaluations of dideoxyazacytidine)

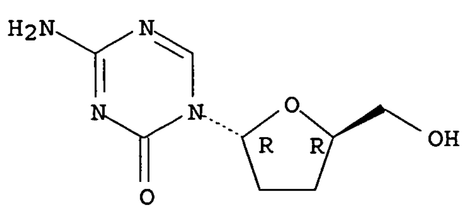
RN 162239-41-0 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



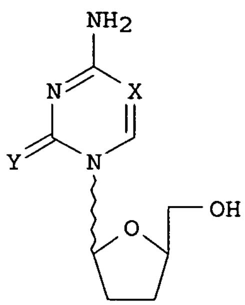
RN 162239-42-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 20 OF 30 HCAPLUS

ACCESSION NUMBER: 1995:353510 HCAPLUS
DOCUMENT NUMBER: 122:240323
TITLE: Synthesis of several pyrimidine L-nucleoside analogs as potential antiviral agents
AUTHOR(S): Lin, Tai-Shun; Luo, Mei-Zhen; Liu, Mao-Chin
CORPORATE SOURCE: Sch. Med., Yale Univ., New Haven, CT, 06520-8066, USA
SOURCE: Tetrahedron (1995), 51(4), 1055-68
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

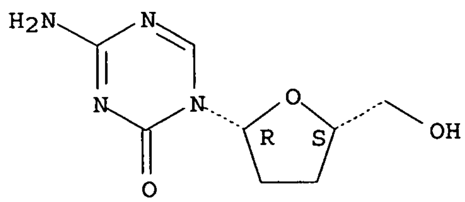
AB β-L-5-Iodo-2'-deoxyuridine (β-L-IUdR) and 1-[(β-L-arabinofuranosyl)-E-5-(2-bromovinyl)]uracil (β-L-BV-ara-U) have been synthesized via a multi-step synthesis from L-arabinose. Dideoxy-β-L-nucleosides, e.g. I (X = N, Y = O; X = S, Y = CH), were synthesized by direct coupling of 1-O-acetyl-5-O-(tert-butyldimethylsilyl)-2,3-dideoxy-L-ribofuranose with the corresponding silylated bases, in the presence of EtAlCl2 in CH2Cl2, followed by separation of the α- and β-isomers and deblocking of the 5'-protecting groups. In addition, 2',3'-dideoxy-β-L-5-fluorocytidine, a potent anti-HIV and anti-HBV agent, was synthesized by an alternative methodol. from 2',3'-dideoxy-β-L-5-fluorouridine via a 4-triazolylpyrimidinone intermediate. These L-nucleoside analogs were tested in vitro against HIV, HBV, HSV-1, and intermediate. These L-nucleoside analogs were tested in vitro against HIV, HBV, HSV-1, and HSV-2. Among these compds., 2',3'-dideoxy-β-L-5-azacytidine was found to show significant activity against HBV in vitro at approx. the same level as 2',3'-dideoxy-β-D-cytidine (ddC), which is known potent anti-HBV agent.

IT **107036-52-2P 162239-41-0P 162239-42-1P 162239-48-7P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis and **antiviral** activity of of pyrimidine L-nucleoside analogs)

RN 107036-52-2 HCAPLUS

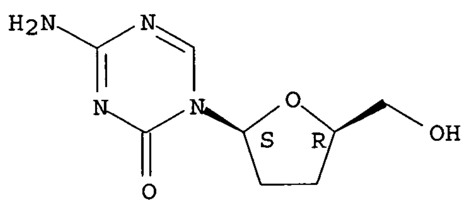
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



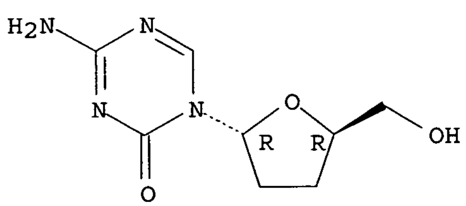
RN 162239-41-0 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



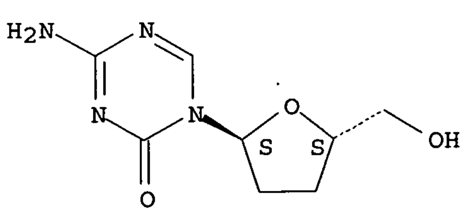
RN 162239-42-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 162239-48-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2S-trans)- (9CI) (CA INDEX NAME)

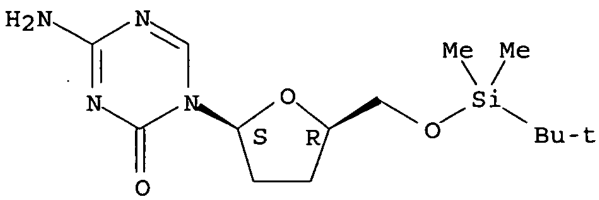
Absolute stereochemistry.



IT **162106-23-2P 162239-39-6P 162239-44-3P**
162239-45-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and **antiviral** activity of of pyrimidine

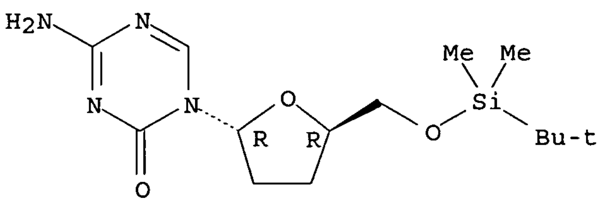
L-nucleoside analogs)
RN 162106-23-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]tetrahydro-2-furanyl]-, (2S-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



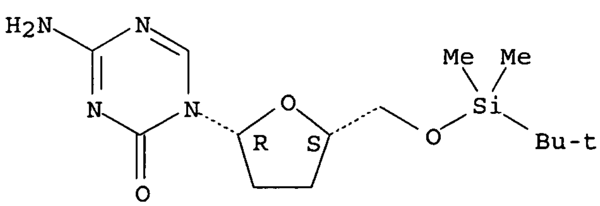
RN 162239-39-6 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]tetrahydro-2-furanyl]-, (2R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



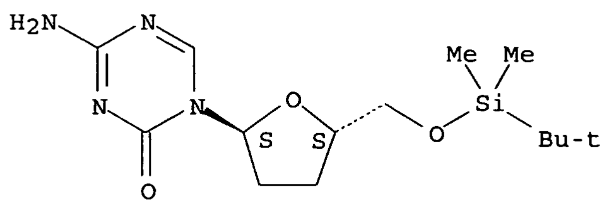
RN 162239-44-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]tetrahydro-2-furanyl]-, (2R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



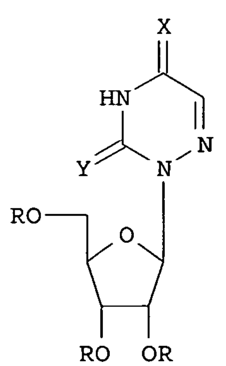
RN 162239-45-4 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]methyl]tetrahydro-2-furanyl]-, (2S-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:29358 HCAPLUS
DOCUMENT NUMBER: 122:187990
TITLE: In vitro and in vivo antiviral (RNA) evaluation of orotidine 5'-monophosphate decarboxylase inhibitors and analogs including 6-azauridine-5'-(ethyl methoxyalaninyl)phosphate (a 5'-monophosphate prodrug)
AUTHOR(S): Gabrielsen, B.; Kirsi, J. J.; Kwong, C. D.; Carter, D. A.; Krauth, C. A.; Hanna, L. K.; Huggins, J. W.; Monath, T. P.; Kefauver, D. F.; et al.
CORPORATE SOURCE: US Army Medical Res. Inst. Infectious Diseases, Frederick, MD, USA
SOURCE: Antiviral Chemistry & Chemotherapy (1994), 5(4), 209-20
CODEN: ACCHEH; ISSN: 0956-3202
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

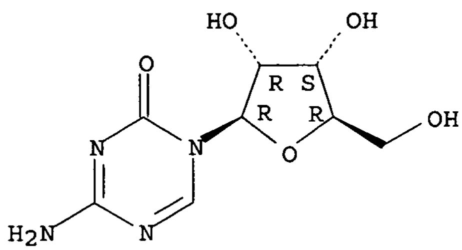


I

AB A series of 29 pyrimidines, e.g. I (R = H, Ac, X = Y = O, S; X = O, Y = S; X = S, Y = O), comprising analogs of 6-azauridine (e.g. 2- and 4-thio-6-azauridine), 6-substituted uridines (including several known inhibitors of orotidine 5'-monophosphate decarboxylase, ODCase, e.g. pyrazofurin), and 6-azauridine-5'-(Et methoxyalaninyl) phosphate (a potential prodrug of 6-AU-5'-MP) were synthesized and evaluated in vitro and in vivo against five RNA viruses: Japanese encephalitis (JE), yellow fever (YF), sandfly fever (SF), Punta Toro (PT) and Venezuelan equine encephalomyelitis (VEE) viruses. 2-Thio-6-azauridine demonstrated the best in vitro activity against all five viruses. However, in vivo activity was not observed in JE-, PT- and VEE-infected mice. The phosphate prodrug of 6-azauridine was significantly more effective than the parent compound in the PT virus mouse model. Optimum in vivo dose/route/schedule

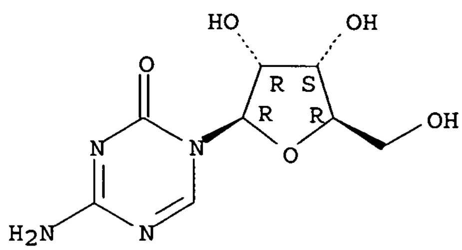
was determined for pyrazofurin in PT-virus-infected mice.
IT 320-67-2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(preparation and **antiviral** activity of azauridine analogs)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

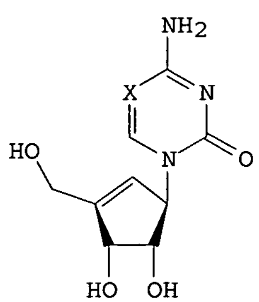


L30 ANSWER 22 OF 30 HCAPLUS
ACCESSION NUMBER: 1993:160609 HCAPLUS
DOCUMENT NUMBER: 118:160609
TITLE: Effects of some agents with different physicochemical and biological effects on replication of HBV
AUTHOR(S): Zhang, Xiheng; Dong, Shanqing; Zhu, Youming; Lu, Deyuan
CORPORATE SOURCE: Dep. Microbiol., Shanghai 2nd Med. Univ., Shanghai, Peop. Rep. China
SOURCE: Zhonghua Weishengwuxue He Mianyixue Zazhi (1992), 12(6), 353-6
CODEN: ZWMZDP; ISSN: 0254-5101
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB After nine agents with different physicochem. and biol. effects were added into HBV (hepatitis B virus) DNA transfected cell media, 2% DMSO, 5-azacytidine, retinyl acetate and calcium ionophore stimulated the HBV-producing cells to secrete HBcAg/HBeAg and to replicate extrachromosomal HBV DNA. In contrast, antiviral drug, Acyclovir inhibited the HBV replication. However, the effect of different concns. of endotoxin was ambiguous due to its bidirectional action. The authors data also proved that HDV was a defective virus and only replicated with HBV simultaneously and that HDV partially inhibited the replication of HBV. Finally, the authors proposed the HBV DNA transient transfection was a more useful method for screening the anti-HBV drugs than the expensive stable transfection.
IT **320-67-2**, 5-Azacytidine
RL: BIOL (Biological study)
(human hepatitis B virus replication response to, **antiviral** screening in relation to)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

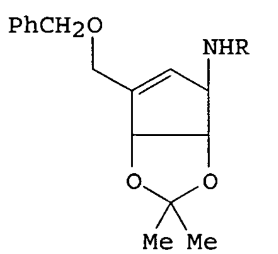
Absolute stereochemistry.



L30 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:531486 HCAPLUS
DOCUMENT NUMBER: 117:131486
TITLE: Synthesis and biological study of the cyclopentenyl carbocyclic nucleoside analog of 5-azacytidine.
AUTHOR(S): Lim, Benjamin B.; Marquez, Victor E.; Dobyns, Kathryn A.; Cooney, David A.; De Clercq, Erik
CORPORATE SOURCE: Div. Cancer Treat., Natl. Cancer Inst., Bethesda, MD, 20892, USA
SOURCE: Nucleosides & Nucleotides (1992), 11(6), 1123-35
CODEN: NUNUD5; ISSN: 0732-8311
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 117:131486
GI



I



II

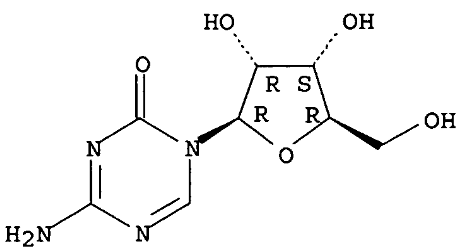
AB Cyclopentenyl cytosine (CPE-C, I; X = CH) possesses excellent antitumor and antiviral activity. The synthesis of the analogous cyclopentenyl triazine nucleoside, 5-aza-CPE-C (I; X = N), was accomplished by a novel approach that utilized a key 1-cyclopentenyl-4-methylisobiuret intermediate II [R = CONHC(OMe):NH] produced from the corresponding cyclopentenylamine II (R = H). I (X = N) was more than six-hundred times less potent than I (X = CH) both in its capacity to reduce CTP levels as well as in its antitumor and antiviral activity.

IT **320-67-2DP**, 5-Azacytidine, analog **2353-33-5DP**, 5-Aza-2'-deoxycytidine, analog
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation, antitumor and **antiviral** activity of)

RN 320-67-2 HCAPLUS

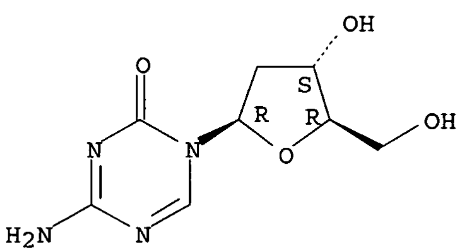
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:626320 HCAPLUS
DOCUMENT NUMBER: 113:226320
TITLE: Effect of chemical and heat therapy on virus concentrations in in vitro potato plantlets
AUTHOR(S): Griffiths, Helen M.; Slack, Steven A.; Dodds, John H.
CORPORATE SOURCE: Dep. Plant Pathol., Cornell Univ., Ithaca, NY, 14853, USA
SOURCE: Canadian Journal of Botany (1990), 68(7), 1515-21
CODEN: CJBOAW; ISSN: 0008-4026
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Potato (Solanum tuberosum) plantlets were established in vitro to evaluate the effectiveness of chems. and heat therapy for antiviral activity. Ribavirin was the most active chemical Further studies were performed in which plantlets established from nodal cuttings were exposed to an alternating 4-h cycle of 35-31° and ribavirin (20 mg/L) therapy for 4 wk, and then tested quant. for virus titer by ELISA. Plantlets were further propagated via nodal cuttings at room temperature without exposure to ribavirin. Virus assays were performed and virus-free plantlets were grown out as mature plants for a final virus assay. Ribavirin alone or in combination with heat therapy was effective in reducing potato virus M, S, and X titers (between 10- and 60-fold). Virus-free plants were obtained from both treatments. For potato viruses Y and leafroll, about a 4-fold reduction in titer was observed after the ribavirin-heat treatments. When multiple viruses were present, quant. (10-20-fold) redns. in potato viruses M, S, X, and leafroll were observed and resulted in plants free of potato viruses M, S, and X. This protocol enables quant. monitoring of

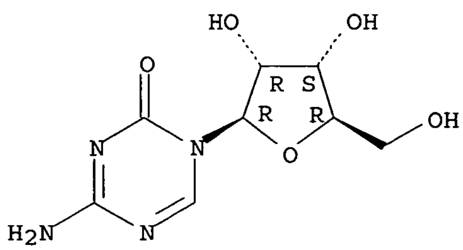
the impact of a single variable on the virus-host interaction. Thus, virus elimination can be obtained without a requisite meristem-tip excision step.

IT 320-67-2, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**antiviral** activity and growth of potato response to)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L30 ANSWER 25 OF 30 HCAPLUS

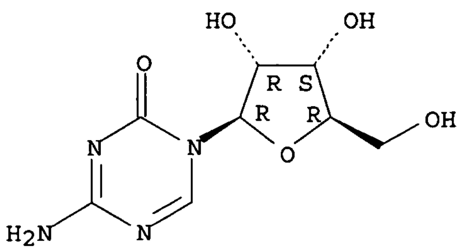
ACCESSION NUMBER: 1990:584252 HCAPLUS
DOCUMENT NUMBER: 113:184252
TITLE: Comparative activities of several nucleoside analogs against duck hepatitis B virus in vitro
AUTHOR(S): Yokota, Tomoyuki; Konno, Kenji; Chonan, Eiko; Mochizuki, Shinobu; Kojima, Kana; Shigeta, Shiro; De Clercq, Erik
CORPORATE SOURCE: Dep. Bacteriol., Fukushima Med. Coll., Fukushima, 960-12, Japan
SOURCE: Antimicrobial Agents and Chemotherapy (1990), 34(7), 1326-30
CODEN: AMACCQ; ISSN: 0066-4804
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Duck hepatitis B virus (DHBV) replication in primary duck hepatocytes was monitored by examining the synthesis of both DHBV DNA and DHBV core antigen. Several nucleoside analogs which were previously shown to inhibit the replication of DNA viruses (i.e., herpesviruses) and retroviruses were examined for their inhibitory effects on the synthesis of DHBV core antigen in primary duck hepatocytes. (S)-9-(3-Hydroxy-2-phosphonylmethoxypropyl)adenine [(S)-HPMPA], 9-(2-phosphonylmethoxyethyl)-2,6-diaminopurine, 2',3'-dideoxyadenosine, and 2',3'-dideoxycytidine inhibited DHBV core antigen synthesis at concns. that were lower than those found to be toxic to the primary hepatocytes. Of all the compds. tested, (S)-HPMPA showed the lowest 50% effective concentration (0.5 μg/mL). The selectivity index or ratio of the 50% cytotoxic concentration to the 50% effective concentration of (S)-HPMPA was greater than 300. (S)-HPMPA not only inhibited DHBV core antigen but also DHBV DNA synthesis in DHBV-infected hepatocytes.

IT 320-67-2, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**antiviral** activity of, against duck hepatitis B virus)

RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



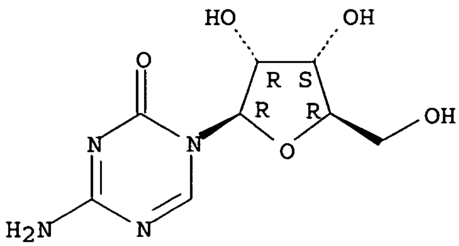
L30 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:544908 HCAPLUS
DOCUMENT NUMBER: 113:144908
TITLE: Inhibition of hepatitis A virus replication in vitro by antiviral compounds
AUTHOR(S): Crance, J. M.; Biziagos, E.; Passagot, J.; Van Cuyck-Gandre, H.; Deloince, R.
CORPORATE SOURCE: Unite Biol. Mol., Cent. Rech. Serv. Sante Armees, La Tronche, 38702, Fr.
SOURCE: Journal of Medical Virology (1990), 31(2), 155-60
CODEN: JMVIDB; ISSN: 0146-6615
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Forty antiviral compds. were screened for inhibitory effect on hepatitis A virus (HAV) antigen expression in the human hepatoma cell line PLC/PRF/5. Ribavirin, amantadine, glycyrrhizin, and pyrazofurin were selected in this screening test and were studied further. The selectivity indexes of these four compds., calculated as the ratio of 50% cytotoxic dose (determined by the trypan blue exclusion and by inhibition of [3H]leucine incorporation) to the 50% ED (determined by the viral antigen expression), were 4.6 and 3.0 with ribavirin, 5.3 and 5.9 with amantadine, 15.2 and 16.9 with glycyrrhizin, and 45.4 and 74.6 with pyrazofurin. All four compds. resulted in concentration-dependent redns. of HAV antigen expression and HAV infectivity. Ribavirin, amantadine, pyrazofurin, and glycyrrhizin emerged, from the present study, as promising candidates for chemotherapy of acute hepatitis A.

IT **320-67-2**, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**antiviral** activity of, against hepatitis A virus, in human hepatoma cells)

RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

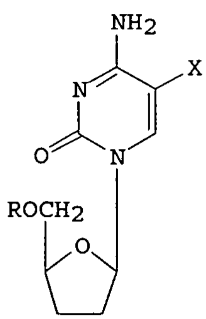
Absolute stereochemistry.



L30 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:458275 HCAPLUS
DOCUMENT NUMBER: 111:58275
TITLE: 5-Substituted-2',3'-dideoxycytidine compounds with anti-HTLV-III activity
INVENTOR(S): Driscoll, John S.; Marquez, Victor E.; Kim, Chong Ho; Kelley, James A.
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4788181	A	19881129	US 1986-913575	19860929
PRIORITY APPLN. INFO.:			US 1986-913575	19860929

OTHER SOURCE(S): CASREACT 111:58275; MARPAT 111:58275
GI



I

AB The title compds. [I; R = H, Na2O3P; X ; F, Br], useful as inhibitors of HIV pathogens, are prepared 2',3'-Dideoxycytidine was brominated with N-bromosuccinimide to give 57% 2',3'-dideoxy-5-bromocytidine, which showed 6% protective effect against HTLV-III/LAV pathogenesis at 1 μM with 14% cytotoxicity vs. 3% protective effect at 10 μM with 8% cytotoxicity for 2',3'-dideoxycytidine.

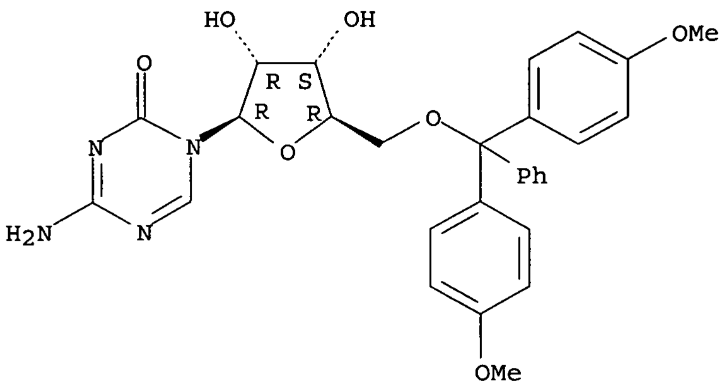
IT **107036-45-3P 107036-47-5P 107036-48-6P**
107036-51-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of **antiviral** nucleosides)

RN 107036-45-3 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[bis(4-methoxyphenyl)phenylmethyl]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

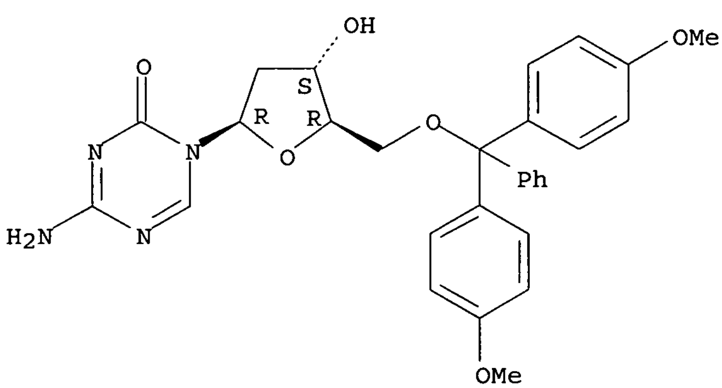
Absolute stereochemistry.



RN 107036-47-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[bis(4-methoxyphenyl)phenylmethyl]-2-deoxy-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

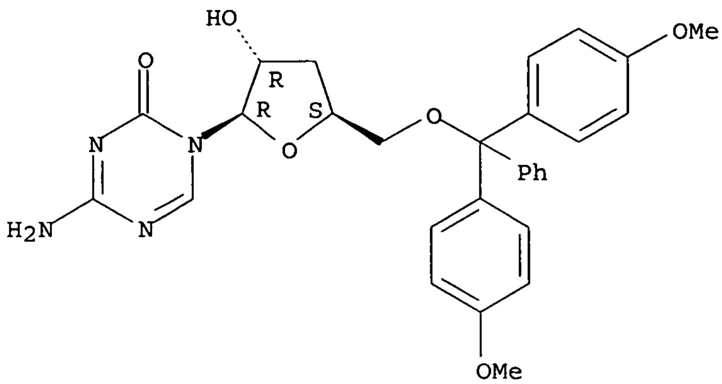
Absolute stereochemistry.



RN 107036-48-6 HCAPLUS

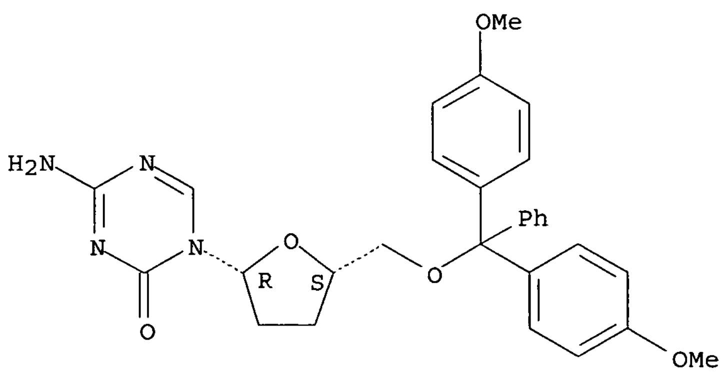
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-O-[bis(4-methoxyphenyl)phenylmethyl]-3-deoxy-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



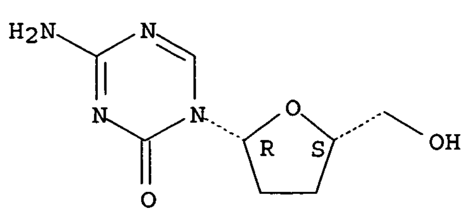
RN 107036-51-1 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[5-[[bis(4-methoxyphenyl)phenylmethoxy]methyl]tetrahydro-2-furanyl]-, (2R-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **107036-52-2P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of, as **antiviral** agent)
RN 107036-52-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[tetrahydro-5-(hydroxymethyl)-2-furanyl]-, (2R-cis)- (9CI) (CA INDEX NAME)

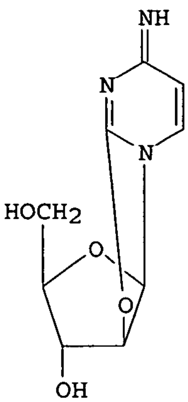
Absolute stereochemistry.



L30 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:116339 HCAPLUS
DOCUMENT NUMBER: 100:116339
TITLE: Effects of animal antiviral chemicals on plant viruses
AUTHOR(S): Dawson, W. O.
CORPORATE SOURCE: Dep. Plant. Pathol., Univ. California, Riverside, CA, 92521, USA
SOURCE: Phytopathology (1984), 74(2), 211-13
CODEN: PHYTAJ; ISSN: 0031-949X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Tobacco mosaic virus (TMV) and cowpea (Vigna ungiuculata) chlorotic mottle virus were effectively inhibited by 14 of 27 chems. reported to be active against several animal viruses. Adenine arabinoside [5536-17-4], ribavirin [36791-04-5], guanidine [113-00-8], cordycepin [73-03-0], tubercidin [69-33-0], (S)-9-(2,3-dihydroxypropyl)adenine [54262-83-8], distamycin A [636-47-5], 2,3-bis-(acetylmercaptomethyl)quinoxaline [36014-40-1], cycloleucine [52-52-8], 3-deazauridine [39935-49-4], 2,3-diaminopyridine [452-58-4], 8-azaguanine [134-58-7], 2-thiouracil [141-90-2], and 5-azacytidine **[320-67-2]** were inhibitory. The ability of such a large proportion of the chems. tested to inhibit both plant viruses suggest the possibility of a wide-spectrum **antiviral** compound for plant viruses. The selectivity of these compds., measured as the concentration required to inhibit virus multiplication in leaf disks compared to the concentration that allowed growth and differentiation of tobacco tissue cultures, was low for most. Adenine arabinoside, ribavirin, (S)-9-(2,3-dihydroxypropyl)adenine, and 5-azacytidine, however, allowed callus growth at concns. greater than that required to inhibit virus multiplication in leaf disks, but these concns. did not induce TMV-infected tobacco callus to grow free of TMV. Some of the tobacco callus cultures that grew on noninhibitory concns. of cycloleucine or 3-deazauridine, however, became free of TMV.

L30 ANSWER 29 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:121892 HCAPLUS
DOCUMENT NUMBER: 92:121892
TITLE: Study of the antileukotic activity of some nucleoside analogs
AUTHOR(S): Kazakova, V. N.; Platonova, G. N.; Lesnaya, N. A.; Peretolchina, N. M.; Bergol'ts, V. M.; Sof'ina, Z. P.
CORPORATE SOURCE: Mosk. Nauchno-Issled. Inst. Onkol., Moscow, USSR
SOURCE: Sint. Izuch. Nov. Otechestvennykh Protivoleikoznykh Prep., Tezisy Konf. (1979), 57. Editor(s): Sadauskas, P. B. Akad. Nauk Litovskoi SSR, Inst. Biokhim.: Vilnius, USSR.
CODEN: 42MYAU
DOCUMENT TYPE: Conference
LANGUAGE: Russian
GI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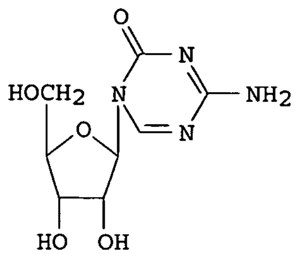
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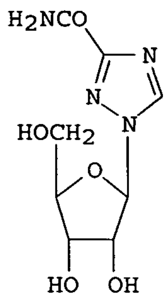
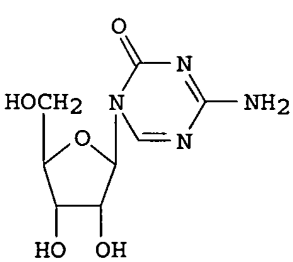

III

AB Cyclocytidine (I) [31698-14-3], 5-azacytidine (II) **[320-67-2]**, and Virazole (III) [36791-04-5] differed in their effects on the various forms of exptl. leukemia examined I and II showed high activity against lymphoblastic L-1210 and lymphocytic P388 leukemias, whereas III had a minimal inhibitory effect. II was effective against Rauscher leukemia in mice but did not inhibit the Rauscher leukemia virus in vitro, whereas I was ineffective in vivo but showed **antiviral** activity in vitro; III was inactive either in vivo or in vitro.

L30 ANSWER 30 OF 30 HCAPLUS
ACCESSION NUMBER: 1980:104117 HCAPLUS
DOCUMENT NUMBER: 92:104117
TITLE: 5-Azacytidine and the synthesis of purine nucleotides in cerebral cortex slices from guinea pigs by a salvage pathway from adenine
AUTHOR(S): Halcak, Lukac; Pechan, Ivan; Cihak, Alois
CORPORATE SOURCE: Lek. Fac. Univ. Komenskeho, Bratislava, 80100, Czech.
SOURCE: Bratislavske Lekarske Listy (1979), 72(3), 341-8
CODEN: BLLIAX; ISSN: 0006-9248
DOCUMENT TYPE: Journal
LANGUAGE: Slovak
GI


I

AB In an in vitro experiment on slices from the brain cortex, the effect of the cytostatic, immunosuppressive and **antivirally** effective substance 5-azacytidine (I) **[320-67-2]** was studied on the synthesis of purine nucleotides and the total RNA fraction by the salvage pathway from adenine [73-24-5]. The azapyrimidine nucleoside decreased the specific radioactivity of labeled nucleotide adenine and guanine only

in a relatively high concentration (10-2M), however on assessing the conditions between the specific radioactivities of nucleotide adenine and free tissue adenine as the immediate precursor, no differences were found to exist between slices of the brain cortex incubated with and without the presence of I. Comparison of the specific radioactivities of adenine of the total RNA fraction yielded a similar picture. There were no substantial differences observed between the levels of adenine nucleotides and the total RNA fraction in slices incubated with and without I.

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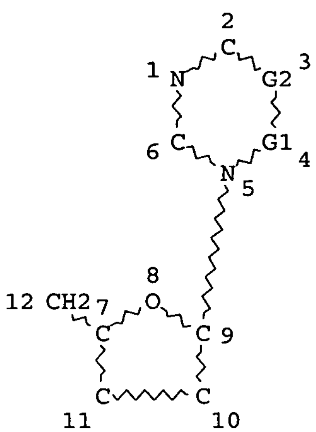


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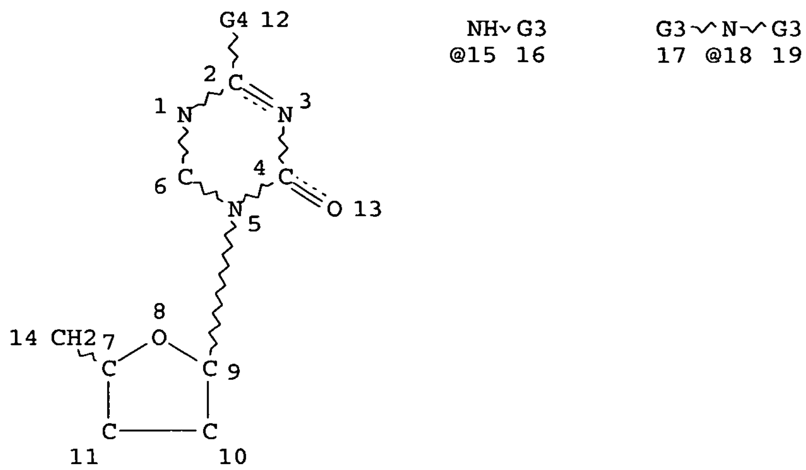

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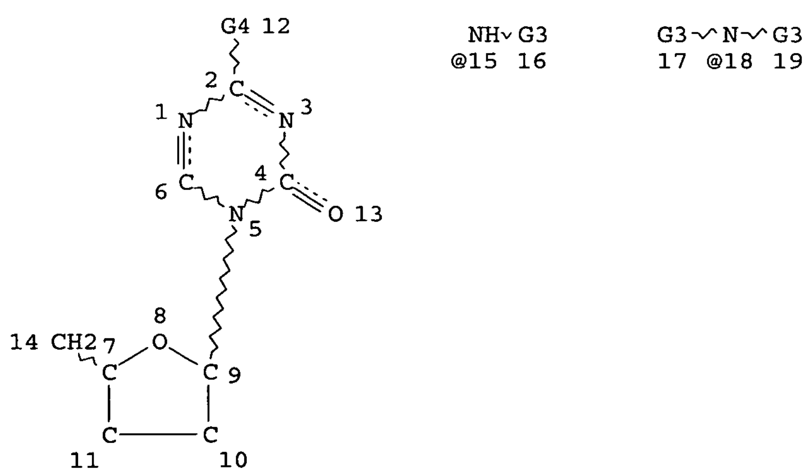

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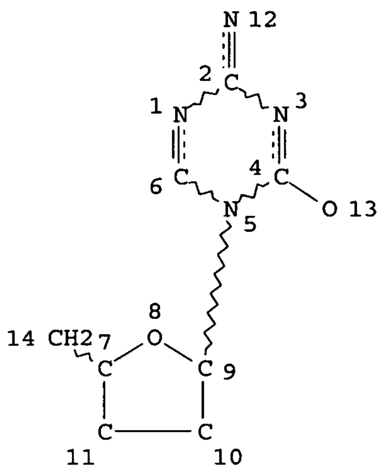

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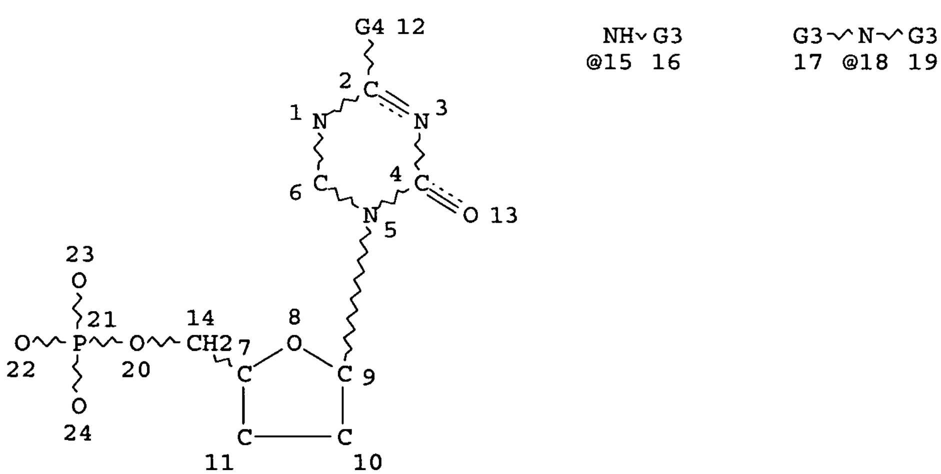

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DEFAULT ECLEVEL IS LIMITED

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L33 ANSWER 1 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:15791 HCAPLUS
DOCUMENT NUMBER: 142:120462
TITLE: Therapeutic and diagnostic conjugates for use with multispecific antibodies
INVENTOR(S): Mcbride, William J.; Goldenberg, David M.; Noren, Carl; Hansen, Hans J.
PATENT ASSIGNEE(S): Immunomedics, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 53 pp., Cont.-in-part of U.S. Ser. No. 150,654.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 16
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
US 2005002945	A1	20050106	US 2004-776470	20040211	
US 2002006379	A1	20020117	US 2001-823746	20010403	<--
US 6962702	B2	20051108			
US 2003198595	A1	20031023	US 2002-150654	20020517	
WO 2005077071	A2	20050825	WO 2005-US4177	20050211	

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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1998-90142P P 19980622
US 1998-104156P P 19981014

US 1999-337756	A2	19990622
US 1999-382186	B2	19990823
US 2001-823746	A2	20010403
US 2002-150654	A2	20020517
US 2004-776470	A	20040211

OTHER SOURCE(S): MARPAT 142:120462

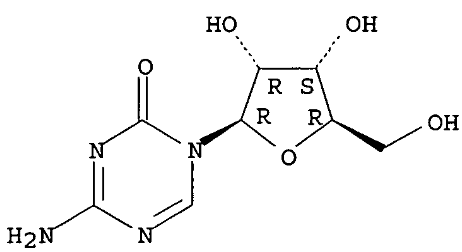
AB Disclosed are compds. that include two or more haptens conjugated by a spacer or a carrier. The haptens may include diethylenetriaminepentaacetate (DTPA), histamine-succinyl-glutamine (HSG), or combinations of DTPA and HSG. The compds. also includes an effector mol. which may be conjugated to one or more of the haptens, the spacer/carrier, or both. The effector mol. may be conjugated by a number of linkages including an ester linkage, an imino linkage, an amino linkage, a sulfide linkage, a thiosemicarbazone linkage, a semicarbazone linkage, an oxime linkage, an ether linkage, or combinations of these linkages. Also disclosed are methods of synthesizing the compds. and/or precursors of the compds.

IT **320-67-2D**, Azacytidine, radiolabeled conjugates
RL: DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(therapeutic and diagnostic conjugates for use with multispecific antibodies)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 2 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:934160 HCAPLUS
DOCUMENT NUMBER: 141:388650
TITLE: Anti-CD74 immunoconjugates and their therapeutic and diagnostic uses
INVENTOR(S): Griffiths, Gary L.; Hansen, Hans J.; Goldenberg, David M.; Lundberg, Bo B.
PATENT ASSIGNEE(S): Immunomedics, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 44 pp., Cont.-in-part of U.S. Ser. No. 377,122.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004219203	A1	20041104	US 2003-706852	20031112
US 6306393	B1	20011023	US 1999-307816	19990510 <--
US 2002071807	A1	20020613	US 2001-965796	20011001 <--

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     US 2003124058        A1    20030703   US 2002-314330         20021209
     US 2003133930        A1    20030717   US 2003-350096         20030124
     US 2004115193        A1    20040617   US 2003-377122         20030303
     AU 2004247270        A1    20041223   AU 2004-247270         20040617
     CA 2529496           AA    20041223   CA 2004-2529496        20040617
     WO 2004110390        A2    20041223   WO 2004-US19238        20040617
     WO 2004110390        A3    20050428
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             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
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             SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
             SN, TD, TG
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             IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK
     US 2005191300        A1    20050901   US 2005-104594         20050413
     US 2006051349        A1    20060309   US 2005-222838         20050912
PRIORITY APPLN. INFO.:                     US 1999-307816      A1 19990510
                                           US 2000-590284      A1 20000609
                                           US 2001-965796      A1 20011001
                                           US 2002-360259P     P  20020301
                                           US 2002-314330      A2 20021209
                                           US 2003-350096      A2 20030124
                                           US 2003-377122      A2 20030303
                                           US 2003-478830P     P  20030617
                                           US 1997-41506P      P  19970324
                                           US 1998-38995       A2 19980312
                                           US 1999-138284P     P  19990609
                                           US 2003-706852      A  20031112
                                           WO 2004-US19238     W  20040617
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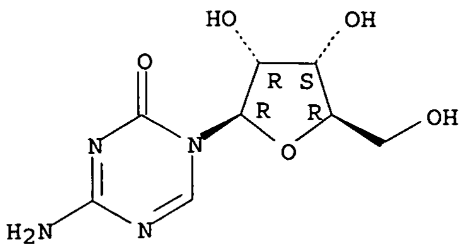
AB Disclosed are compns. that include anti-CD74 immunoconjugates and a therapeutic and/or diagnostic agent. Also disclosed are methods for preparing the immunoconjugates and using the immunoconjugates in diagnostic and therapeutic procedures. The compns. may be part of a kit for administering the anti-CD74 immunoconjugates compns. in therapeutic and/or diagnostic methods. Anti-CD74 binding mols. are conjugated to the one or more lipids by one or more of a sulfide linkage, a hydrazone linkage, a hydrazine linkage, an ester linkage, an amido linkage, an amino linkage, an imino linkage, a thiosemicarbazone linkage, a semicarbazone linkage, an oxime linkage, a carbon-carbon linkage. Anti-CD74 immunoconjugates comprise a drug, a prodrug, a toxin, an enzyme, a radioisotope, an immunomodulator, a cytokine, a hormone, an antibody., an oligonucleotide, or a photodynamic agent.

IT **320-67-2**, Azacytidine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(anti-CD74 immunoconjugates and their therapeutic and diagnostic uses)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 3 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:716246 HCAPLUS
DOCUMENT NUMBER: 137:247550
TITLE: Preparation of multifluoro-substituted chalcones and analogs as activators of caspases and inducers of apoptosis
INVENTOR(S): Cai, Sui Xiong; Reddy, P. Sanjeeva; Drewe, John A.; Nguyen, Bao Ngoc; Kasibhatla, Shailaja
PATENT ASSIGNEE(S): Cytovia, Inc., USA
SOURCE: PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002072544	A2	20020919	WO 2002-US7569	20020314 <--
WO 2002072544	A3	20021219		

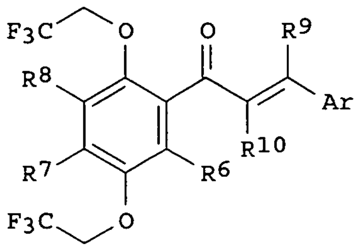
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004171637	A1	20040902	US 2003-471720	20031016

PRIORITY APPLN. INFO.: US 2001-275473P P 20010314
WO 2002-US7569 W 20020314

OTHER SOURCE(S): MARPAT 137:247550
GI



I

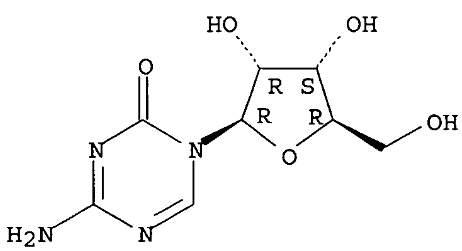
AB The title compds. [I; Ar = (un)substituted (hetero)aryl; R6-R10 = H, halo, haloalkyl, etc.] which are activators of caspases and inducers of apoptosis, and therefore may be used to induce cell death in a variety of clin. conditions in which uncontrolled growth and spread of abnormal cells occurs, were prepared Thus, reacting 2,5-bis(2,2,2-trifluoromethoxy)acetophenone with α,α,α-trifluoro-p-tolualdehyde afforded 13% I [Ar = 4-F3CC6H4; R6-R10 = H] which was identified as antineoplastic compound that inhibits cell proliferation in a variety of cancer cell lines (data given).

IT **320-67-2**, 5-Azacytidine
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(preparation of multifluoro-substituted chalcones and analogs and their use as activators of caspases and inducers of apoptosis in combination with other known antitumor agents)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 4 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2002:695764 HCAPLUS
DOCUMENT NUMBER:	137:210932
TITLE:	Combination therapy for reduction of toxicity of chemotherapeutic agents
INVENTOR(S):	Prendergast, Patrick T.
PATENT ASSIGNEE(S):	Ire.
SOURCE:	PCT Int. Appl., 66 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2002069949	A2	20020912	WO 2002-IB632	20020305 <--
WO 2002069949	A3	20030605		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2002169140 A1 20021114 US 2002-91855 20020306

PRIORITY APPLN. INFO.: IE 2001-209 A 20010306

AB Provided in the present invention are compds. suitable for treating neoplasms and tumors, viral, bacterial and parasite infections and combination therapy with these agents to lower the adverse side effects.

IT **320-67-2**, Azacytidine **62488-57-7**, 5,6-Dihydro-5-azacytidine **65886-71-7**, Ara-AC

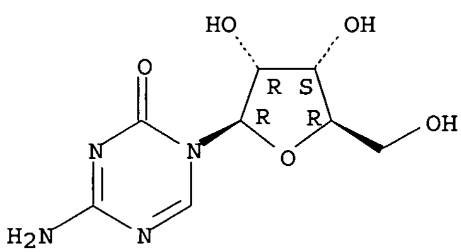
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(combination therapy for reduction of toxicity of chemotherapeutic agents)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

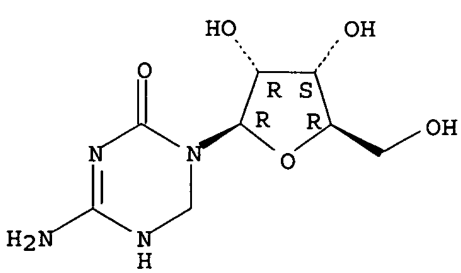
Absolute stereochemistry.



RN 62488-57-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

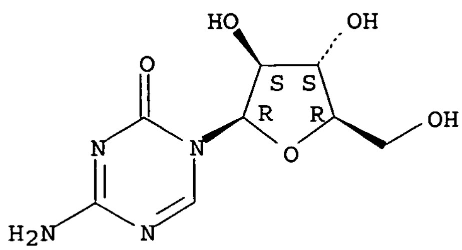
Absolute stereochemistry.



RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 5 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:695725 HCAPLUS
DOCUMENT NUMBER: 137:210908
TITLE: Nucleotides, preparation thereof, and use as inhibitors of RNA viral polymerases
INVENTOR(S): Montgomery, John A.; Babu, Yarlagadda S.; Rowland, R. Scott; Chand, Pooran
PATENT ASSIGNEE(S): Biocryst Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2002069903	A2	20020912	WO 2002-US6551		20020306 <--
WO 2002069903	A3	20030227			

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004138170	A1	20040715	US 2004-471056		20040303
PRIORITY APPLN. INFO.:			US 2001-273342P	P	20010306
			US 2001-285698P	P	20010424
			US 2001-331323P	P	20011114
			WO 2002-US6551	W	20020306

OTHER SOURCE(S): MARPAT 137:210908

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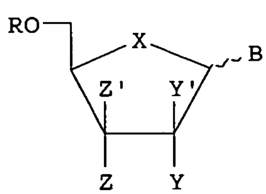


I

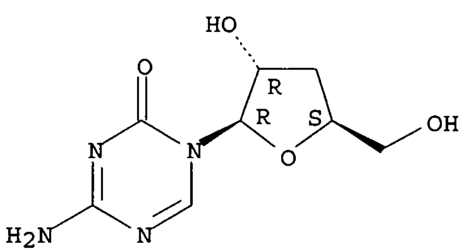
AB **Antiviral** nucleotides I were prepared as inhibitors of RNA viral polymerases (no data), wherein X is selected from the group consisting of: O, S, N-R1, and CHR1; Y and Y' is individually selected from H, OR1, NR1R2, and N3; Z and Z' is individually selected from H, OR1, and NR1R2; R = H, monophosphate PO3R32, diphosphate P2O6R33, triphosphate P3O9R34; R1 and R2 is selected from H, alkyl, acyl, aryl which may be substituted or unsubstituted; R3 is selected from H, alkyl, alkenyl, alkynyl, aryl, acyloxyalkyl, and pivaloyloxyalkyl; B is selected from 5 or 6-substituted uracil or cytosine, pseudouracil, N-substituted pseudouracil, 2-thiouracil, 2-thiocytosine, 5- or 6-substituted 2-thiouracil and 2-thiocytosine, 6-azauracil, 5-azacytosine, 8-azapurines, and 7-aza-8-deazapurines. Substitutions may be halo-substituted alkyl, halo-substituted alkenyl, halo-substituted alkynyl, halo-substituted aryl, alkylthio, or NR1R2. When Z and Z' are H and Y or Y' is OH then B is not 5-Me uracil or cytosine; and pharmaceutically acceptable salts thereof, mono, di or triphosphate and prodrugs thereof. Thus, 1-(3'-deoxy-β-D-ribofuranosyl)-2-thiocytosine was prepared as inhibitors of RNA viral polymerases (no data).

IT **455951-65-2P**
RL: BSU (Biological study, unclassified); PNU (Preparation, unclassified); BIOL (Biological study); PREP (Preparation)
(Nucleotides, preparation thereof, and use as inhibitors of RNA viral polymerases)

RN 455951-65-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(3-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 6 OF 48 HCAPLUS

ACCESSION NUMBER: 2002:521462 HCAPLUS
DOCUMENT NUMBER: 137:88442
TITLE: Incensole and furanogermacrens and compounds in treatment for inhibiting neoplastic lesions and microorganisms
INVENTOR(S): Shanahan-Pendergast, Elisabeth
PATENT ASSIGNEE(S): Ire.
SOURCE: PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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     WO 2002053138        A2    20020711   WO 2002-IE1          20020102 <--
     WO 2002053138        A3    20020919
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         RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, AT, BE, CH, CY, DE, ES, FI,
             ML, MR, NE, SN, TD, TG
     EP 1351678           A2    20031015   EP 2002-727007       20020102
         R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     US 2004092583        A1    20040513   US 2004-250535       20040102
PRIORITY APPLN. INFO.:                     IE 2001-2         A  20010102
                                           WO 2002-IE1       W  20020102
OTHER SOURCE(S):          MARPAT 137:88442
```

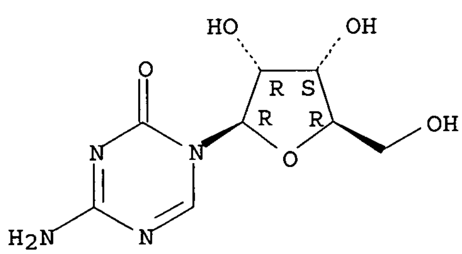
AB The invention discloses the use of incensole and/or furanogermacrens, derivs. metabolites and precursors thereof in the treatment of neoplasia, particularly resistant neoplasia and immunodysregulatory disorders. These compds. can be administered alone or in combination with conventional chemotherapeutic, **antiviral**, antiparasite agents, radiation and/or surgery. Incensole and furanogermacren and their mixture showed antitumor activity against various human carcinomas and melanomas and antimicrobial activity against Staphylococcus aureus and Enterococcus faecalis.

IT **320-67-2**, Azacitidine **2353-33-5**, Decitabine
62488-57-7 **65886-71-7**, Fazarabine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pharmaceutical formulation further including; incensole and furanogermacrens and compds. as antitumor and antimicrobial agents)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

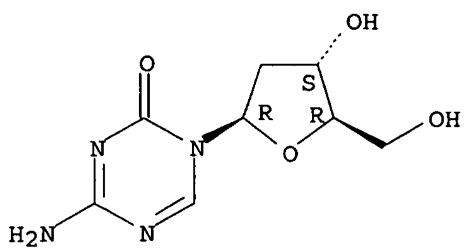
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

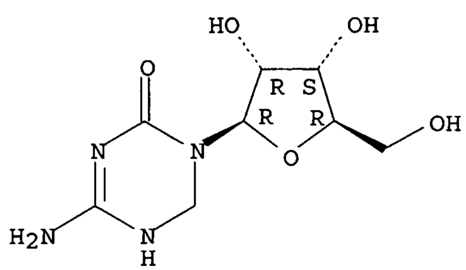
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



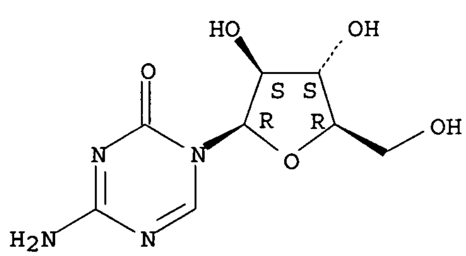
RN 62488-57-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65886-71-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 7 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:488245 HCAPLUS
DOCUMENT NUMBER: 137:57593
TITLE: Compositions and methods using alkyl- and phospholipid-drug conjugates for double-targeting virus infections and cancer cells
INVENTOR(S): Kucera, Louis S.; Fleming, Ronald A.; Ishaq, Khalid S.; Kucera, Gregory L.; Morris-Natschke, Susan L.
PATENT ASSIGNEE(S): Wake Forest University School of Medicine, USA; University of North Carolina At Chapel
SOURCE: U.S. Pat. Appl. Publ., 35 pp., Cont.-in-part of U.S. Ser. No. 693,658.
CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002082242	A1	20020627	US 2001-844201	20010427 <--
US 7026469	B2	20060411		
US 6670341	B1	20031230	US 2000-693658	20001019
CA 2445565	AA	20021107	CA 2002-2445565	20020426
WO 2002087465	A2	20021107	WO 2002-US13338	20020426
WO 2002087465	A3	20031211		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1389970	A2	20040225	EP 2002-721822	20020426

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

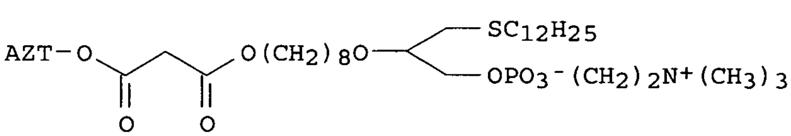
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005505499	T2	20050224	JP 2002-584819	20020426
US 2004161398	A1	20040819	US 2003-748738	20031230

PRIORITY APPLN. INFO.:

US 2000-693658	A2	20001019
US 1999-162290P	P	19991028
US 2001-844201	A	20010427
WO 2002-US13338	W	20020426

OTHER SOURCE(S): MARPAT 137:57593

GI



I

AB The invention includes compns. and methods useful for treatment of a virus infection in a mammal by double-targeting the virus (i.e. targeting the virus at more than one stage of the virus life cycle) and thereby inhibiting virus replication. The compns. of the invention include compds., which comprise a phosphocholine moiety covalently conjugated with one or more therapeutic agents (e.g. nucleoside analog, protease inhibitor, etc.) to a lipid backbone. The invention also includes pharmaceutical compns. for use in treatment of a virus infection in mammals. The methods of the invention comprise administering a compound of the invention, a pharmaceutically acceptable salt or a prodrug thereof, or a pharmaceutical composition of the invention, in an amount effective to treat the infection, to a mammal infected with a virus. Addnl., the invention includes compns. and methods useful for combating a cancer in a mammal and facilitating delivery of a therapeutic agent to a mammalian cell. The compns. of the invention include compds., which comprise an alkyl lipid or phospholipid moiety covalently conjugated with a therapeutic agent (e.g., a nucleoside analog). The invention also includes pharmaceutical compns.

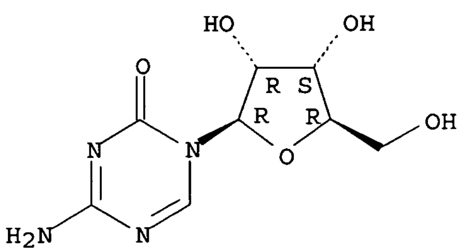
for combating cancer and facilitating delivery of a therapeutic agent to a mammalian cell. The methods of the invention comprise administering a compound of the invention, a pharmaceutically acceptable salt or a prodrug thereof, or a pharmaceutical composition of the invention, in an amount effective to combat a cancer or to facilitate delivery of a therapeutic agent to a mammalian cell. Preparation of INK-20 (I) is described.

IT **320-67-2D**, 5-Azacytidine, alkyl- and phospholipid conjugates
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(alkyl- and phospholipid-drug conjugates for double-targeting virus infections and cancer cells)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 8 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:428749 HCAPLUS
DOCUMENT NUMBER: 137:28318
TITLE: Conjugates of glycosylated/galactosylated peptide, bifunctional linker, and nucleotidic monomers/polymers, and related compositions and methods of use
INVENTOR(S): Ts'o, Paul O. P.; Duff, Robert; Deamond, Scott
PATENT ASSIGNEE(S): Cell Works Inc., USA; Johns Hopkins University
SOURCE: PCT Int. Appl., 90 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002043771	A2	20020606	WO 2001-US44943	20011130 <--
WO 2002043771	A3	20030828		
WO 2002043771	C2	20040429		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,

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          GN, GQ, GW, ML, MR, NE, SN, TD, TG
     CA 2431839          AA    20020606   CA 2001-2431839       20011130 <--
     AU 2002017980       A5    20020611   AU 2002-17980         20011130 <--
     US 2003032584       A1    20030213   US 2001-998497        20011130
     US 6906182          B2    20050614
     EP 1355672          A2    20031029   EP 2001-998366        20011130
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     JP 2004536027       T2    20041202   JP 2002-545741        20011130
     US 2005250679       A1    20051110   US 2005-152135        20050613
PRIORITY APPLN. INFO.:                    US 2000-250139P    P  20001201
                                          US 2001-998497     A1 20011130
                                          WO 2001-US44943    W  20011130
```

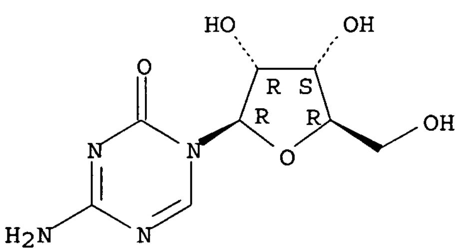
AB The invention discloses a conjugate A-L-P (A = glycosylated/galactosylated peptide that binds to cell-surface receptor; L = bifunctional linker, which does not comprise naturally occurring amino acid and is covalently bonded to A and P in regiospecific manner; P = monomer, homopolymer, or heteropolymer comprising at least one nucleotide, or analog thereof, which inhibits intracellular biosynthesis of nucleotides or nucleic acids in sequence-independent manner, wherein either or both of covalent bond between A and L and the covalent bond between L and P can be cleaved intracellularly); a composition comprising such a conjugate; a method of inhibiting a abnormal cellular proliferation in a mammal; and a method of inhibiting replication of a virus in a mammal.

IT **320-67-2D**, 5-Azacytidine, conjugates
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(glycosylated/galactosylated peptide-bifunctional linker-nucleotidic monomer/polymer conjugates, compns., and methods of use)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 9 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:833338 HCAPLUS
DOCUMENT NUMBER: 135:376707
TITLE: Polymeric compounds useful as prodrugs
INVENTOR(S): Sampath, Umashanker; Toce, Joseph A.; Nadji, Sourena
PATENT ASSIGNEE(S): Reliable Biopharmaceutical, Inc., USA
SOURCE: PCT Int. Appl., 82 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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     PATENT NO.          KIND   DATE        APPLICATION NO.       DATE
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     WO 2001085751        A1    20011115    WO 2001-US15106       20010509 <--
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
             VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 2002013287        A1    20020131    US 2001-853047        20010509 <--
     US 2004132684        A1    20040708    US 2003-739965        20031217
PRIORITY APPLN. INFO.:                      US 2000-202795P    P  20000509
                                            US 2001-853047     A1 20010509
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OTHER SOURCE(S): MARPAT 135:376707

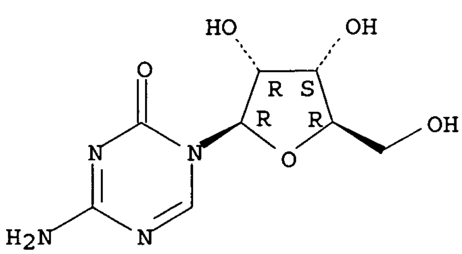
AB Disclosed are polymeric compds. which are useful as prodrugs, comprising a chain of monomeric nucleosides, nucleoside analogs or abasic nucleosides, wherein at least one of the nucleosides or nucleoside analogs or a heterocyclic derivative thereof is pharmaceutically active and the nucleosides, nucleoside analogs or abasic nucleosides are linked by a phosphodiester group, a phosphorothioate group or an H-, alkyl or alkenyl phosphonate group. Cytarabine phosphoramidite was prepared by the reaction of 5'-DMT-N4,2'-diacetyl-2'-arabinocytidine with chloro-2-cyanoethyl-N,N-diisopropylamino phosphoramidite (yield 64.4%).

IT **320-67-2DP**, 5-Azacytidine, conjugates
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(polymeric compds. useful as prodrugs)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 10 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:675032 HCAPLUS

DOCUMENT NUMBER: 136:20203

TITLE: Unnatural enantiomers of 5-azacytidine analogs: syntheses and enzymatic properties

AUTHOR(S): Gaubert, G.; Gosselin, G.; Eriksson, S.; Vita, A.; Maury, G.

CORPORATE SOURCE: UMR 5625 du CNRS, Departement de Chimie, Universite Montpellier II, Montpellier, 34095, Fr.

SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2001

), 20(4-7), 837-840
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:20203

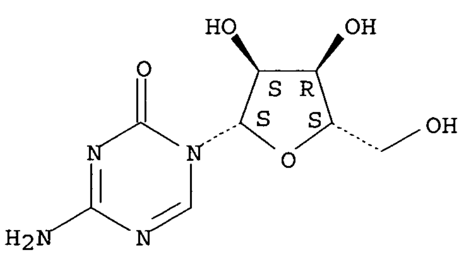
AB 2'-Deoxy-β-L-5-azacytidine (L-Decitabine), β-L-5-azacytidine, and derivs. were stereospecifically prepared starting from L-ribose or L-xylose. D- And L-enantiomers of 2'-deoxy-β-5-azacytidine were weak substrates of human recombinant deoxycytidine kinase (dCK), whereas both enantiomers of β-5-azacytidine or the L-xylo-analogs were not substrates of the enzyme. None of the reported derivs. of β-L-5-azacytidine was a substrate of human recombinant cytidine deaminase (CDA).

IT **206269-46-7P 324018-57-7P 324018-58-8P**
324018-59-9P
RL: BCP (Biochemical process); PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(stereo- and regioselective synthesis of unnatural enantiomers of azacytidine analogs as enzyme substrates and inhibitors of HIV and HBV)

RN 206269-46-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-L-ribofuranosyl- (9CI) (CA INDEX NAME)

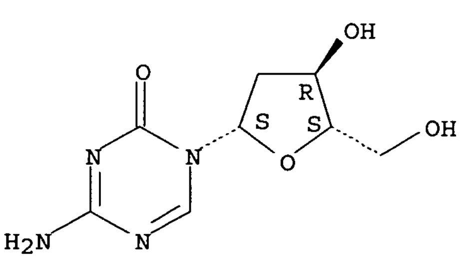
Absolute stereochemistry. Rotation (+).



RN 324018-57-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-L-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

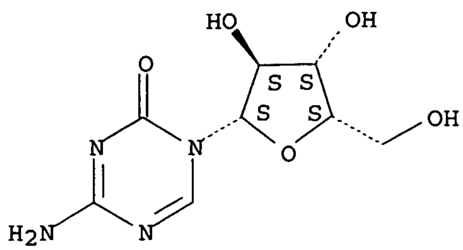
Absolute stereochemistry. Rotation (-).



RN 324018-58-8 HCAPLUS

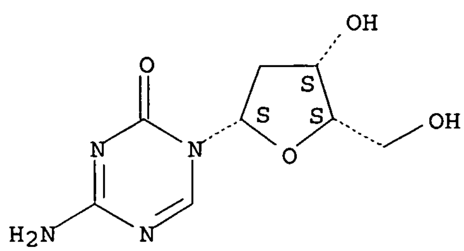
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-L-xylofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



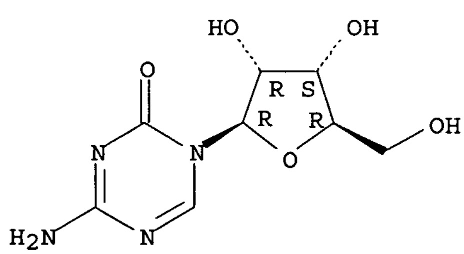
RN 324018-59-9 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-L-threo-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



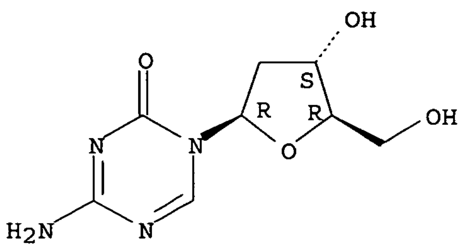
IT **320-67-2P 2353-33-5P**
RL: BCP (Biochemical process); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(stereo- and regioselective synthesis of unnatural enantiomers of azacytidine analogs as enzyme substrates and inhibitors of HIV and HBV)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 11 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:674910 HCAPLUS
DOCUMENT NUMBER: 136:31313
TITLE: Zidovudine (AZT) resistance in H9 cells due to decreased TK expression is associated with hypermethylation of TK gene
AUTHOR(S): Groschel, B.; Hover, G.; Doerr, H. W.; Cinatl, J., Jr.
CORPORATE SOURCE: Institute of Medical Virology, Johann Wolfgang Goethe University, Frankfurt/M., Germany
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (**2001**), 20(4-7), 487-492
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

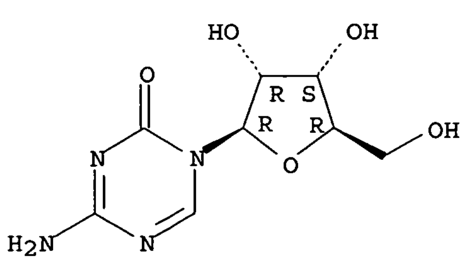
AB AZT resistant human T-lymphoid H9 cells, deficient in TK gene expression, re-expressed TK mRNA and regained the ability to metabolize AZT by exposure to the demethylation agent azacytidine (AzaCd). Cytotoxic and anti-HIV-1 effects of AZT were increased in H9 AZT resistant cells treated with AzaCd when compared to untreated cells. This leads to the assumption that drug induced DNA hypermethylation was involved in the TK gene-silencing mechanism. Our results suggest approaches using modulation of gene methylation for increasing **antiviral** efficiency of drugs.

IT **320-67-2**, Azacytidine
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(zidovudine (AZT) resistance in H9 cells due to decreased TK expression is associated with hypermethylation of TK gene)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 12 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:582317 HCAPLUS
DOCUMENT NUMBER: 135:164441
TITLE: Tumor cell chemosensitization by deoxycytidine kinase phosphorylation of pyrimidine and purine deoxynucleoside prodrugs
INVENTOR(S): Fine, Howard A.; Kufe, Donald W.; Manome, Yoshinobu
PATENT ASSIGNEE(S): Dana-Farber Cancer Institute, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001012835	A1	20010809	US 1998-65933	19980424 <--
US 6423692	B2	20020723		

PRIORITY APPLN. INFO.: US 1997-44314P P 19970424

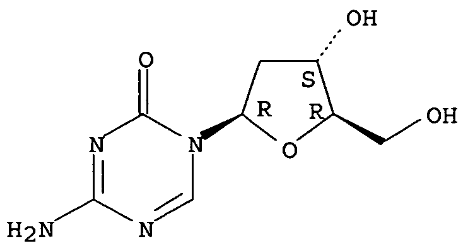
AB The present invention is directed to a method of increasing the effectiveness of mols. that are phosphorylated in their active state. This is accomplished by transducing cells with the gene for deoxycytidine kinase resulting in the chemosensitization of such cells which are targets for those mols. Preferably, the target cells are virally infected cells and/or tumor cells. Preferred tumor cells are solid tumor cells such as brain tumors. Deoxycytidine kinase (dCK) is an enzyme that catalyzes the phosphorylation of a variety of pyrimidine and purine deoxynucleosides to their corresponding nucleotide. A number of the abovementioned deoxynucleoside mols. when phosphorylated by dCK are activated" and display an antineoplastic and/or **antiviral** activity. We have now identified a new method for enhancing the effectiveness of a group of mols. that are phosphorylated or capable of phosphorylation by dCK. Thus, we have identified a new chemosensitization "gene/ prodrug" system. This system involves using dCK as the gene and mols. activated by dCK phosphorylation as the prodrug. The mols. that can be used are those that can be used against leukemia cells. These mols. include ara-C, dFdC, cladribine, zalcitabine, and fludarabine. Phosphorylation of these mols. yields the corresponding nucleoside triphosphate which exhibits an **antiviral**, antineoplastic, etc. activity. One preferred way of increasing the effectiveness of these mols. is by increasing the sensitization of the target cells to these mols. That can be accomplished by increasing the levels of dCK expressed. We have discovered that one way of accomplishing this is by introducing a dCK gene into a cell, e.g. by transducing a target cell with a gene encoding dCK, preferably the human dCK gene.

IT **2353-33-5**, 5-Aza-2'-deoxycytidine
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(tumor cell chemosensitization by deoxycytidine kinase phosphorylation of pyrimidine and purine deoxynucleoside prodrugs)

RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 13 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:137173 HCAPLUS
DOCUMENT NUMBER: 134:178396
TITLE: Synthesis, activity and formulations of pharmaceutical compounds for treatment of oxidative stress and/or endothelial dysfunction
INVENTOR(S): Del Soldato, Piero
PATENT ASSIGNEE(S): Nicox S.A., Fr.
SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001012584	A2	20010222	WO 2000-EP7225	20000727 <--
WO 2001012584	A3	20020829		
W: AE, AL, AU, BA, BB, BG, BR, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2381409	AA	20010222	CA 2000-2381409	20000727 <--
BR 2000013264	A	20020416	BR 2000-13264	20000727 <--
EP 1252133	A2	20021030	EP 2000-953102	20000727
EP 1252133	B1	20050608		
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JP 2003515526	T2	20030507	JP 2001-516885	20000727
NZ 516889	A	20041029	NZ 2000-516889	20000727
AU 781643	B2	20050602	AU 2000-65670	20000727
AT 297375	E	20050615	AT 2000-953102	20000727
EP 1593664	A1	20051109	EP 2005-104064	20000727
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RU 2264383	C2	20051120	RU 2002-103509	20000727
ES 2243292	T3	20051201	ES 2000-953102	20000727
ZA 2002000628	A	20030423	ZA 2002-628	20020123
NO 2002000623	A	20020409	NO 2002-623	20020208 <--
AU 2005202824	A1	20050721	AU 2005-202824	20050628
PRIORITY APPLN. INFO.:			IT 1999-MI1817 A	19990812
			EP 2000-953102 A3	20000727
			WO 2000-EP7225 W	20000727

OTHER SOURCE(S): MARPAT 134:178396

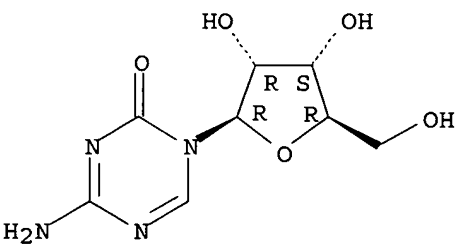
AB Compds. or their salts of general formula (I): A-B-N(O)s wherein: s is an integer equal to 1 or 2; A = R-T1-, wherein R is the drug radical and T1 = (CO)t or (X)t', wherein X = O, S, NR1c, R1c is H or a linear or branched alkyl or a free valence, t and t' are integers and equal to zero or 1, with the proviso that t = 1 when t' = 0; t = 0 when t' = 1; B = -TB -X2-O- wherein TB = (CO) when t = 0, TB = X when t' = 0, X being as above defined; X2, bivalent radical, is such that the precursor drug of A and the precursor of B meet resp. the pharmacol. tests described in the description. Synthesis, activity and formulations of pharmaceutical compds. for treatment of oxidative stress and/or endothelial dysfunction are disclosed. The precursors are such as to meet the pharmacol. test reported in the description.

IT **320-67-2**, Azacitidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(antitumor; synthesis, activity and formulations of pharmaceutical compds. for treatment of oxidative stress and/or endothelial dysfunction)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 14 OF 48 HCAPLUS

ACCESSION NUMBER: 2000:742057 HCAPLUS
DOCUMENT NUMBER: 133:309791
TITLE: Synthesis, activity and formulations of pharmaceutical compounds for treatment of oxidative stress and/or endothelial dysfunction
INVENTOR(S): Del Soldato, Piero
PATENT ASSIGNEE(S): Nicox S.A., Fr.
SOURCE: PCT Int. Appl., 140 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000061541	A2	20001019	WO 2000-EP3239	20000411 <--
WO 2000061541	A3	20010927		

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RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,

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          DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
          CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
    IT 1311923          B1     20020320    IT 1999-MI752          19990413 <--
    CA 2370425          AA     20001019    CA 2000-2370425        20000411 <--
    BR 2000009703       A      20020108    BR 2000-9703           20000411 <--
    EP 1169298          A2     20020109    EP 2000-926870         20000411 <--
    EP 1169298          B1     20060104
        R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, CY
    JP 2002541236       T2     20021203    JP 2000-610818         20000411
    TR 200102928        T2     20021223    TR 2001-200102928      20000411
    NZ 514270           A      20040227    NZ 2000-514270         20000411
    RU 2237057          C2     20040927    RU 2001-127574         20000411
    AU 777579           B2     20041021    AU 2000-45474          20000411
    AT 315021           E      20060215    AT 2000-926870         20000411
    ZA 2001008126       A      20030403    ZA 2001-8126           20011003
    NO 2001004928       A      20011213    NO 2001-4928           20011010 <--
    US 6987120          B1     20060117    US 2001-926322         20011015
    US 2006030605       A1     20060209    US 2005-234084         20050926
PRIORITY APPLN. INFO.:                     IT 1999-MI752       A  19990413
                                           WO 2000-EP3239      W  20000411
                                           US 2001-926322      A3 20011015
OTHER SOURCE(S):         MARPAT 133:309791
```

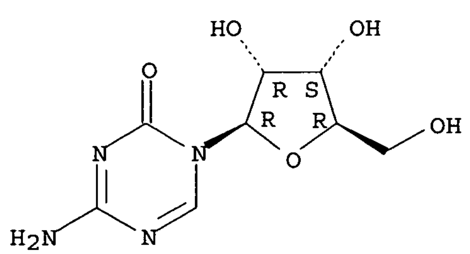
AB Synthesis, activity and formulations of pharmaceutical compds. for treatment of oxidative stress and/or endothelial dysfunction are disclosed. The precursors are such as to meet the pharmacol. test reported in the description.

IT **320-67-2**, Azacitidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(antitumor; synthesis, activity and formulations of pharmaceutical compds. for treatment of oxidative stress and/or endothelial dysfunction)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 15 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

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ACCESSION NUMBER:        2000:742053  HCAPLUS
DOCUMENT NUMBER:         133:310142
TITLE:                   Synthesis, activity and formulations of pharmaceutical
                         compounds for treatment of oxidative stress and/or
                         endothelial dysfunction
INVENTOR(S):             Del Soldato, Piero
PATENT ASSIGNEE(S):      Nicox S.A., Fr.
SOURCE:                  PCT Int. Appl., 159 pp.
                         CODEN: PIXXD2
```

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000061537	A2	20001019	WO 2000-EP3234	20000411 <--
WO 2000061537	A3	20010927		
W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, DM, EE, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MA, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
IT 1311924	B1	20020320	IT 1999-MI753	19990413 <--
CA 2370412	AA	20001019	CA 2000-2370412	20000411 <--
BR 2000009702	A	20020108	BR 2000-9702	20000411 <--
EP 1169294	A2	20020109	EP 2000-925203	20000411 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002541233	T2	20021203	JP 2000-610814	20000411
NZ 514267	A	20040625	NZ 2000-514267	20000411
RU 2237657	C2	20041010	RU 2001-127576	20000411
AU 778989	B2	20041223	AU 2000-44001	20000411
ZA 2001008127	A	20030103	ZA 2001-8127	20011003
NO 2001004927	A	20011213	NO 2001-4927	20011010 <--
US 6869974	B1	20050322	US 2001-926326	20011015
US 2005261242	A1	20051124	US 2004-24857	20041230

PRIORITY APPLN. INFO.:
IT 1999-MI753 A 19990413
WO 2000-EP3234 W 20000411
US 2001-926326 A3 20011015

OTHER SOURCE(S): MARPAT 133:310142

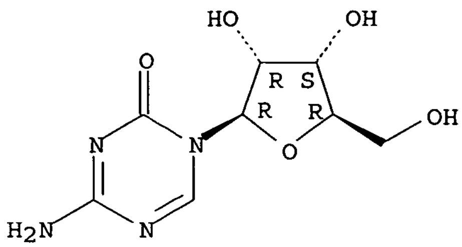
AB Compds. A-B-C-N(O)s and A-C1[N(O)s]-B1 or their salts [s is an integer 1 or 2, preferably s = 2; A is the radical of a drug and is such as to meet the pharmacol. tests reported in the description; C and C1 are two bivalent radicals; the precursors of the radicals B and B1 are such as to meet the pharmacol. test reported in the description] were prepared for use as pharmaceuticals. Thus, (S,S)-N-acetyl-S-(6-methoxy-α-methyl-2-naphthalenylacetyl)cysteine 4-nitroxybutyl ester was prepared (NCX 2101) from naproxene and N-acetylcysteine in the first of 28 synthetic examples given. Pharmacol. test examples and tabular data are also given.

IT **320-67-2**, Azacitidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(drug precursor)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 16 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:475560 HCAPLUS
DOCUMENT NUMBER: 133:109949
TITLE: Pharmaceutical compositions for treatment of diseased tissues
INVENTOR(S): Lee, Clarence C.; Lee, Feng-Min
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000040269	A2	20000713	WO 2000-US191	20000105 <--
WO 2000040269	A3	20001130		

W: AU, CA, CN, JP
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: US 1999-114906P P 19990105

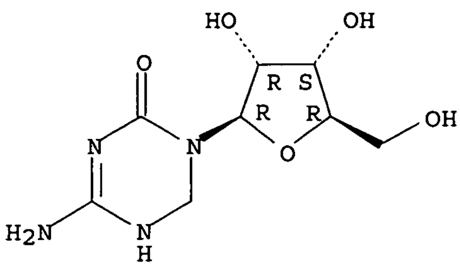
AB A method to treat diseased tissue is provided where a cytotoxic compound is administered to a patient in need of treatment in combination with an immunostimulant. Diseased cells and/or infectious microbes/viruses are killed by the cytotoxic compound in the presence of the immunostimulant. The cell components including cellular contents and cell membrane fragments are presented by the immunostimulant to the host animal as antigens to stimulate the immune responses toward other diseased cells of the same type(s), that either remain in the vicinity or reside in distant tissues or organs. The cytotoxic mol. and immunostimulant are preferably applied locally at high concns., either sequentially or, preferably, simultaneously. For example, the composition can be administered directly to a target cancer. The composition can be prepared in various forms, such as a paste, a time release molded solid shape, a solution, a mixture with emulsifier, etc. Alternatively, the cytotoxic mol. and immunostimulant are applied in sequence.

IT **62488-57-7**, DHAC
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(DHAC; pharmaceutical compns. for treatment of diseased tissues)

RN 62488-57-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

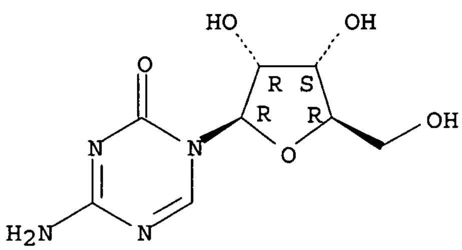


IT 320-67-2, 5-Azacytidine 2353-33-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(pharmaceutical compns. for treatment of diseased tissues)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

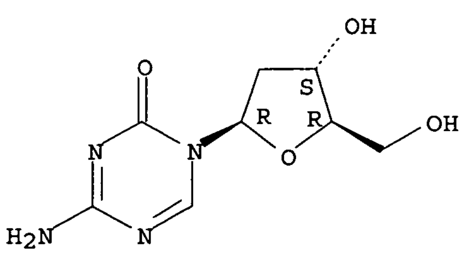
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 17 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:98300 HCAPLUS

DOCUMENT NUMBER: 132:132356

TITLE: Chemically induced intracellular hyperthermia for therapeutic and diagnostic use

INVENTOR(S): Bachynsky, Nicholas; Roy, Woodie

PATENT ASSIGNEE(S): Texas Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 149 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000006143	A1	20000210	WO 1999-US16940	19990727 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2337690	AA	20000210	CA 1999-2337690	19990727 <--
AU 9951318	A1	20000221	AU 1999-51318	19990727 <--
AU 750313	B2	20020718		
EP 1098641	A1	20010516	EP 1999-935949	19990727 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRIORITY APPLN. INFO.: US 1998-94286P P 19980727
WO 1999-US16940 W 19990727

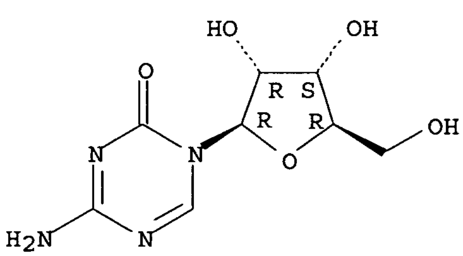
AB Therapeutic pharmacol. agents and methods are disclosed for chemical induction of intracellular hyperthermia and/or free radicals for the diagnosis and treatment of infections, malignancy, and other medical conditions. A process and composition are provided for the diagnosis or killing of cancer cells and inactivation of susceptible bacterial, parasitic, fungal, and viral pathogens by chemical generating heat, and/or free radicals and/or hyperthermia-inducible immunogenic determinants by using mitochondrial uncoupling agents, especially 2,4-dinitrophenol, and their conjugates, either alone or in combination with other drugs, hormones, cytokines and radiation.

IT **320-67-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chemical induced intracellular hyperthermia for diagnostic and therapeutic use, and use with other agents)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 18 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:736476 HCAPLUS
DOCUMENT NUMBER: 131:346535
TITLE: Use of neomycin for treating angiogenesis-related diseases
INVENTOR(S): Hu, Guo-Fu; Vallee, Bert L.
PATENT ASSIGNEE(S): The Endowment for Research In Human Biology, Inc., USA
SOURCE: PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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     PATENT NO.          KIND    DATE        APPLICATION NO.         DATE
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     WO 9958126           A1     19991118    WO 1999-US10269         19990511 <--
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             DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
             JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,
             MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
             TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
             MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
             ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,
             CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     CA 2331620           AA     19991118    CA 1999-2331620         19990511 <--
     AU 9939804           A1     19991129    AU 1999-39804           19990511 <--
     EP 1083896           A1     20010321    EP 1999-922915          19990511 <--
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
     US 6482802           B1     20021119    US 2000-700436          20001109
PRIORITY APPLN. INFO.:                       US 1998-84921P       P  19980511
                                             WO 1999-US10269      W  19990511
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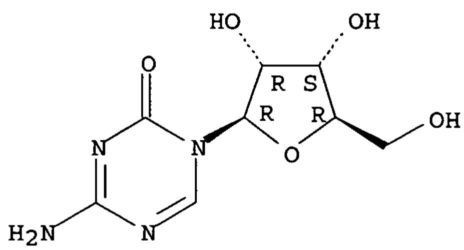
AB The present invention is directed to using neomycin or an analog thereof as a therapeutic agent to treat angiogenesis-related diseases, which are characterized by excessive, undesired or inappropriate angiogenesis or proliferation of endothelial cells. The present invention is also directed to pharmaceutical compns. comprising: (a) neomycin or an analog and, optionally, (b) another anti-angiogenic agent or an anti-neoplastic agent. The present invention is further directed to a method for screening neomycin analogs having anti-angiogenic activity. A preferred embodiment of the invention relates to using neomycin to treat subjects having such diseases. A dose of 20 ng neomycin/embryo or higher completely inhibited angiogenin-induced angiogenesis in the chorioallantoic membrane (CAM) assay. Neomycin inhibits angiogenin-induced angiogenesis mainly through inhibition of nuclear translocation of angiogenin.

IT **320-67-2**, Azacitidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(neomycin, its analogs and other agents for treatment of angiogenesis-related diseases)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 19 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:48609 HCAPLUS
DOCUMENT NUMBER: 130:119591
TITLE: Antioxidant enhancement of therapy for hyperproliferative conditions
INVENTOR(S): Chinery, Rebecca; Beauchamp, R. Daniel; Coffey, Robert J.; Medford, Russell M.; Wadsinski, Brian
PATENT ASSIGNEE(S): Atherogenics, Inc., USA
SOURCE: PCT Int. Appl., 112 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9901118	A2	19990114	WO 1998-US13750		19980701 <--
WO 9901118	A3	19990422			
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RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
AU 9882827	A1	19990125	AU 1998-82827		19980701 <--
EP 1019034	A2	20000719	EP 1998-933078		19980701 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
JP 2002511878	T2	20020416	JP 1999-507360		19980701 <--
CA 2294247	C	20041026	CA 1998-2294247		19980701 <--
CA 2294247	AA	19990114			
US 2001049349	A1	20011206	US 2001-779086		20010207 <--
PRIORITY APPLN. INFO.:			US 1997-886653	A	19970701
			US 1997-967492	A	19971111
			US 1998-108609	B1	19980701
			WO 1998-US13750	W	19980701

OTHER SOURCE(S): MARPAT 130:119591

AB A method to enhance the cytotoxic activity of an antineoplastic drug comprises administering an effective amount of the antineoplastic drug to a host exhibiting abnormal cell proliferation in combination with an effective cytotoxicity-increasing amount of an antioxidant. The invention also includes a method to decrease the toxicity to an antineoplastic agent

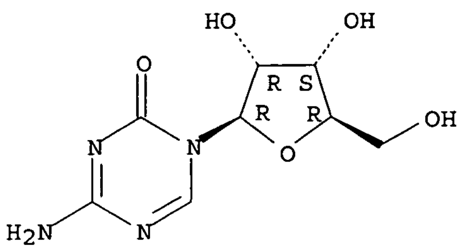
or increase the therapeutic index of an antineoplastic agent administered for the treatment of a solid growth of abnormally proliferating cells, comprising administering an antioxidant prior to, with, or following the antineoplastic treatment.

IT **320-67-2**, Azacitidine **2353-33-5**, Decitabine **65886-71-7**, Fazarabine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antioxidant enhancement of therapy for hyperproliferative conditions)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

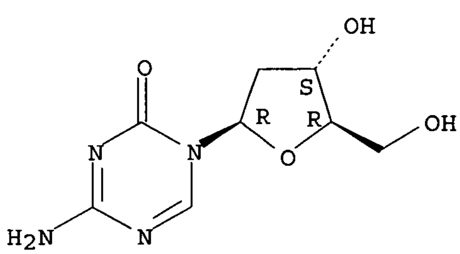
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

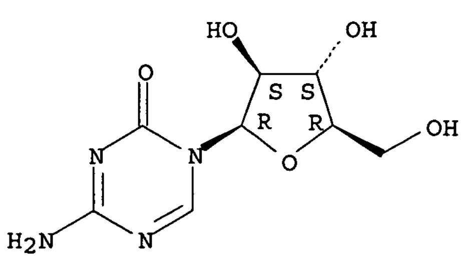
Absolute stereochemistry.



RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 20 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:25982 HCAPLUS
DOCUMENT NUMBER: 130:61105
TITLE: Pharmaceutical composition and method using N-phosphonoglycine derivatives for inhibiting the growth of cancers and treatment of viral infections
INVENTOR(S): Camden, James Berger
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA
SOURCE: U.S., 7 pp., Cont.-in-part of U.S. 5,665,713. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
US 5854231	A	19981229	US 1996-680469		19960715	<--
US 5665713	A	19970909	US 1995-420940		19950412	<--
ZA 9602880	A	19970317	ZA 1996-2880		19960411	<--
US 5902804	A	19990511	US 1997-802653		19970218	<--
US 6090796	A	20000718	US 1998-220914		19981224	<--
PRIORITY APPLN. INFO.:			US 1995-420940	A2	19950412	
			US 1995-1840P	P	19950803	
			US 1996-680469	A1	19960715	

OTHER SOURCE(S): MARPAT 130:61105

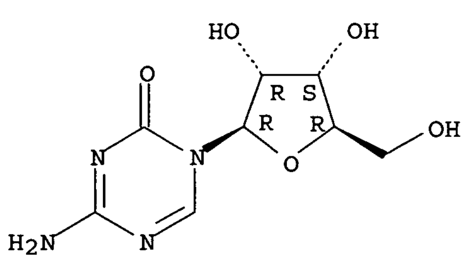
AB A pharmaceutical composition is disclosed that inhibits the growth of cancers and tumors in mammals, particularly in human and warm-blooded animals. The composition contains N-phosphonoglycine derivs. which are systemic herbicides in combination with chemotherapeutic agents for treatment of cancers and tumors. N-phosphonoglycine derivs. can be used to treat viral infections, particularly herpes infections. Optionally potentiators can be included.

IT **320-67-2**, Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(phosphonoglycine derivs. and combinations for treatment of cancer and viral infections)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

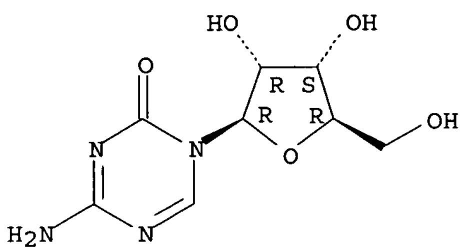
L33 ANSWER 21 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:764282 HCAPLUS
DOCUMENT NUMBER: 130:20546
TITLE: HIV and cancer treatment
INVENTOR(S): Camden, James Berger
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
WO 9851303	A1	19981119	WO 1997-US21564		19971126	<--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM						
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG						
ZA 9709095	A	19980511	ZA 1997-9095		19971010	<--
CA 2268848	AA	19981119	CA 1997-2268848		19971126	<--
AU 9874029	A1	19981208	AU 1998-74029		19971126	<--
EP 954309	A1	19991110	EP 1997-949599		19971126	<--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI						
BR 9712981	A	20000418	BR 1997-12981		19971126	<--
CN 1254281	A	20000524	CN 1997-182189		19971126	<--
JP 2000510156	T2	20000808	JP 1998-522997		19971126	<--
NO 9901701	A	20000117	NO 1999-1701		19990409	<--
KR 2000049064	A	20000725	KR 1999-703137		19990410	<--
PRIORITY APPLN. INFO.:			US 1997-46726P	P	19970516	
			WO 1997-US21564	W	19971126	

AB A method of treating HIV or other viral infections by administering a herbicide or fungicide or derivative thereof to an animal or human. The fungicides or herbicides can be used in conjunction with other treatments, e.g. with AZT or protease inhibitors for the treatment of HIV. For example, thiabendazole and chloropropham have been shown to quickly reduce the level of virus production from cell populations chronically infected with HIV-1 and the **antiviral** effect is maintained with continued compound exposure. This reduction of virus production occurs at concns. which are non toxic to the host cell and which have no effect on the syntheses of cellular DNA, RNA and protein. Further, chronically infected cells treated for prolonged periods of time with thiabendazole and chloropropham were not super-infected with HIV. A method for inhibiting the growth of tumors and cancers in mammals comprising administering a herbicidal or fungicidal derivative is also disclosed herein. The fungicides or herbicides can be used in conjunction with other treatments, e.g. taxol for the treatment of breast cancer. Potentiators can also be included in the herbicidal or fungicidal composition This method is particularly effective when the cancer or virus is an animal cell genetically modified by plant or fungus genetic material. A chemotherapeutic agent can also be administered first to significantly reduce the size of the cancer and then the treatment with the herbicide or fungicide is used. These methods are particularly effective when the cancer or virus is a mutated cell

comprising plant or fungal genetic material.
IT **320-67-2**, Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(therapy of cancer and viral infections with drugs in combination with fungicides and herbicides)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 1998:665003 HCAPLUS
DOCUMENT NUMBER: 130:32619
TITLE: An Escherichia coli system expressing human deoxyribonucleoside salvage enzymes for evaluation of potential antiproliferative nucleoside analogs
AUTHOR(S): Wang, Jianghai; Neuhard, Jan; Eriksson, Staffan
CORPORATE SOURCE: Department of Veterinary Medical Chemistry, The Biomedical Center, Swedish University of Agricultural Sciences, Uppsala, S-751 23, Swed.
SOURCE: Antimicrobial Agents and Chemotherapy (**1998**), 42(10), 2620-2625
CODEN: AMACCQ; ISSN: 0066-4804
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Deoxyribonucleoside salvage in animal cells is mainly dependent on two cytosolic enzymes, thymidine kinase (TK1) and deoxycytidine kinase (dCK), while Escherichia coli expresses only one type of deoxynucleoside kinase, i.e., TK. A bacterial whole-cell system based on genetically modified E. coli was developed in which the relevant bacterial deoxypyrimidine metabolic enzymes were mutated, and the cDNA for human dCK or TK1 under the control of the lac promoter was introduced. The TK level in extract from induced bacteria with cDNA for human TK1 was found to be 20,000-fold higher than that in the parental strain, and for the strain with human dCK, the enzyme activity was 160-fold higher. The in vivo incorporation of deoxythymidine (Thd) and deoxycytidine (dCyd) into bacterial DNA by the two recombinant strains was 20 and 40 times higher, resp., than that of the parental cells. A number of nucleoside analogs, including cytosine arabinoside, 5-fluoro-dCyd, difluoro-dCyd, and several 5-halogenated deoxyuridine analogs, were tested with the bacterial system, as well as with human T-lymphoblast CEM cells. The results showed a close correlation between the inhibitory effects of several important cytostatic

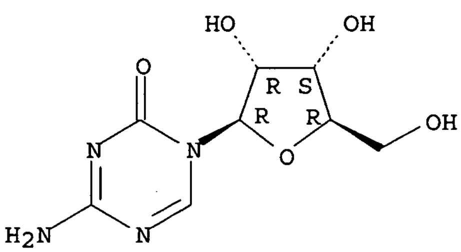
and **antiviral** analogs on the recombinant bacteria and the cellular system. Thus, E. coli expressing human salvage kinases is a rapid and convenient model system which may complement other screening methods in drug discovery projects.

IT **320-67-2**, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(Escherichia coli system expressing human deoxyribonucleoside salvage enzymes for evaluation of potential antiproliferative nucleoside analogs)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 23 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:58962 HCAPLUS
DOCUMENT NUMBER: 128:132423
TITLE: Targeted drug delivery using sulfonamide derivatives
INVENTOR(S): Zhao, Zhiyang; Tomasselli, Alfredo G.; Koeplinger, Kenneth A.; Peterson, Tillie; Suarato, Antonio
PATENT ASSIGNEE(S): Pharmacia & Upjohn Co., USA
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9800173	A2	19980108	WO 1997-US10817	19970701 <--
WO 9800173	A3	19980507		

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AU 9734983	A1	19980121	AU 1997-34983	19970701 <--
EP 909184	A2	19990421	EP 1997-931327	19970701 <--
EP 909184	B1	20030917		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, FI					
JP 2001505533	T2	20010424	JP 1998-504220		19970701 <--
AT 249842	E	20031015	AT 1997-931327		19970701
PT 909184	T	20040227	PT 1997-931327		19970701
ES 2208923	T3	20040616	ES 1997-931327		19970701
US 2003109555	A1	20030612	US 1999-147469		19990317
US 6653331	B2	20031125			
PRIORITY APPLN. INFO.:			US 1996-22489P	P	19960703
			WO 1997-US10817	W	19970701

OTHER SOURCE(S): MARPAT 128:132423

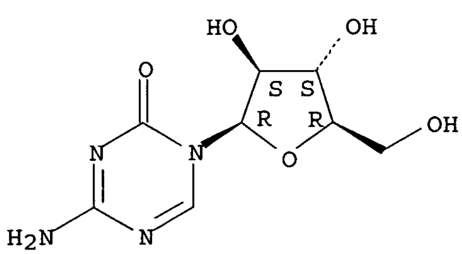
AB The present invention relates to Glutathione S-transferase (GST)/Reduced Glutathione (GSH) as a means for the in vivo release of a drug that has been conjugated to specific electrophilic moieties via a sulfonamide bond. The drug may be an anticancer agent (or one with other therapeutic properties) carrying a free -NH- which has been derivatized by the attachment of an electrophile containing a moiety, such as p-CN- or p-NO2-pyridinylsulfonyl groups, or p-NO2- or 2,4 dinitrophenylsulfonyl groups, or suitable derivs. thereof, to make a prodrug. Optionally, the sulfonamide moiety may have attached to it a targeting mol. The present invention also provides GST/GSH as a means for the release of a protected amino derivative that has been conjugated to specific electrophilic moieties via a sulfonamide bond. The precursor is a synthetic intermediate carrying a free -NH- which has been derivatized by the attachment of an electrophile via a sulfonamide bond. Cleavage of [R-(R*,R*)]-5-cyano-N-[3-[1-[5,6-dihydro-4-hydroxy-2-oxo-6-(2-phenylethyl)-6-propyl-2H-pyran-3-yl]propyl]phenyl]-2-pyridinesufonamide by GST/GSH was given as an example.

IT **65886-71-7**, 5-Azacytosine arabinoside
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(targeted drug delivery using sulfonamide derivs.)

RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 24 OF 48 HCAPLUS

ACCESSION NUMBER: 1998:31330 HCAPLUS
DOCUMENT NUMBER: 128:97702
TITLE: TNF-derived peptides having neutrophil and/or monocyte/macrophage stimulatory activity for prevention and treatment of infection
INVENTOR(S): Rathjen, Deborah Ann; Sleigh, Joy Merilyn; Mack, Philip On-Lok; Widmer, Fred
PATENT ASSIGNEE(S): Peptech Ltd., Australia; Rathjen, Deborah Ann; Sleigh, Joy Merilyn; Mack, Philip On-Lok; Widmer, Fred
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9748725	A1	19971224	WO 1997-AU395	19970620 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9730842	A1	19980107	AU 1997-30842	19970620 <--
ZA 9705500	A	19981221	ZA 1997-5500	19970620 <--

PRIORITY APPLN. INFO.: AU 1996-610 A 19960621
AU 1996-2165 A 19960906
AU 1996-3309 A 19961029
WO 1997-AU395 W 19970620
OTHER SOURCE(S): MARPAT 128:97702

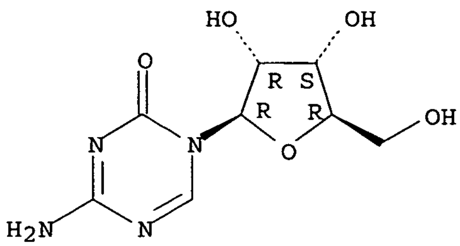
AB Peptides of 8 to 15 amino acids in length are described which possess neutrophil and/or monocyte/macrophage stimulatory activity. The peptides may be used in methods of treatment of various diseases and conditions in which enhancement of neutrophil and/or monocyte/macrophage function is desirable. The peptides are X1-X2-X3-X4-Ser-Thr-X5-Val-X6-Ile-Thr-X7-X8-X9-X10 [X1 = absent, Cys, R1; X2 = absent, Ala, Arg, Glu, Gly; X3 = absent, Ala, Arg, Asn, Cys, Glu, Gly, His, Ile, Leu, Lys, Met, Pro, Ser, Trp, γ-Abu, βAla, Dbu, Sar, Suc, N-Me-Ala; X4 = absent, Ala, Arg, Asn, Glu, His, Leu, Lys, Met, Pro, Ser, Trp, βAla, Nip; X5 = Ala, His; X6 = Ala, Gly, Ile, Leu, Phe, Pro, Ser, Thr, Trp, Val, D-Ala, D-Ile, D-Pro, D-Ser, D-Thr, D-Val, βAla; X7 = His or Ala; X8 = absent, Ile, Leu, Thr, D-Ile; X9 = absent, Ile, D-Ile, Aib; X10 = absent, Cys, R2; R1 = H, RCO (R = C1-20 straight-chain, branched, or cyclic alkyl (optionally substituted and with optional double bonds)), glycosyl, nucleosyl, lipoyl, or R1 is absent when adjacent amino acid is unsubstituted desamino derivative; R2 = NR12R13 (R12, R13 = H, optionally substituted straight-chain, branched, or cyclic alkyl, aralkyl, or aryl), N-glycosyl, etc.]. The peptides are derived from a a portion of the TNF sequence. The peptides may be used in combination therapy with other agents.

IT **320-67-2**, Azacitidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(TNF-derived peptides having neutrophil and/or monocyte/macrophage stimulatory activity for prevention and treatment of infection, and combinations with other agents)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 25 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:251285 HCAPLUS
DOCUMENT NUMBER: 126:314686
TITLE: Negative effects of chemical mutagenesis on the adaptive behavior of vesicular stomatitis virus
AUTHOR(S): Lee, Carolyn H.; Gilbertson, Dorothy L.; Novella, Isabel S.; Huerta, Ramon; Domingo, Esteban; Holland, John J.
CORPORATE SOURCE: Inst. Mol. Genet., Univ. California, La Jolla, CA, 92093, USA
SOURCE: Journal of Virology (**1997**), 71(5), 3636-3640
CODEN: JOVIAM; ISSN: 0022-538X
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

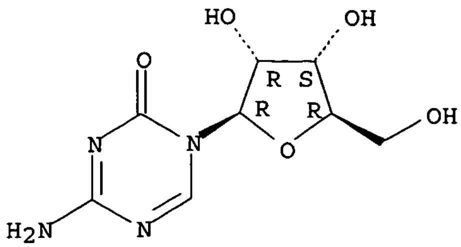
AB Changes in adaptability of vesicular stomatitis virus (VSV) upon treatment with chemical mutagens have been investigated. Results showed no improvement in virus viability or adaptability at any given level of mutagenesis. In fact, increasing inhibition of virus production and adaptability was observed with increasing levels of mutagenesis. This was true for all tested VSV variants replicating either in changing or constant host cell environments. Results also showed that mutagen-treated RNA virus populations which had undergone severe fitness declines were able to recover lost fitness completely after several large-population passages in BHK21 cells. The present findings illustrate the highly optimized states of RNA viruses and their potential to adapt readily. These results are significant for the possible development of specific **antiviral** agents designed to be mutagenic.

IT **320-67-2**, 5-AZAcytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(chemical mutagenesis neg. effects on the adaptive behavior of vesicular stomatitis virus)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 26 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:244346 HCAPLUS
DOCUMENT NUMBER: 126:220704
TITLE: Use of fluconazole for inhibiting the growth of cancers
INVENTOR(S): Camden, James Berger
PATENT ASSIGNEE(S): Procter and Gamble Company, USA
SOURCE: PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9705873	A2	19970220	WO 1996-US12474	19960730 <--
WO 9705873	A3	19970327		
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
US 5908855	A	19990601	US 1996-674180	19960716 <--
CA 2229024	AA	19970220	CA 1996-2229024	19960730 <--
AU 9666833	A1	19970305	AU 1996-66833	19960730 <--
AU 711966	B2	19991028		
EP 841921	A2	19980520	EP 1996-926806	19960730 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
CN 1195288	A	19981007	CN 1996-196682	19960730 <--
BR 9609966	A	19990202	BR 1996-9966	19960730 <--
JP 11510187	T2	19990907	JP 1996-508494	19960730 <--
NZ 315184	A	20000526	NZ 1996-315184	19960730 <--
NZ 503921	A	20020301	NZ 1996-503921	19960730 <--
ZA 9606529	A	19970916	ZA 1996-6529	19960801 <--
NO 9800473	A	19980403	NO 1998-473	19980203 <--

PRIORITY APPLN. INFO.:
US 1995-1889P P 19950804
US 1996-674180 A 19960716
NZ 1996-315184 A1 19960730
WO 1996-US12474 W 19960730

AB A pharmaceutical composition for the treatment of cancers or tumors in mammals is disclosed which comprises 2-(2,4-difluorophenyl)-1,3-bis(1H-1,2,4-triazol-1-yl)propan-2-ol (fluconazole) and its derivs. A chemotherapeutic

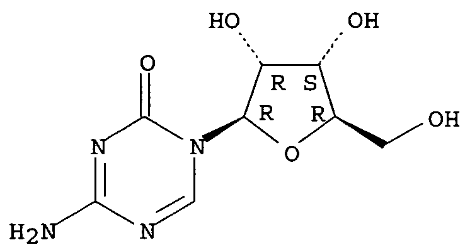
agent can be used in conjunction with fluconazole and its derivs. as potentiator. Fluconazole and its derivs. can also be used to treat viral infections, either alone, in conjunction with other anti-viral agents or with a potentiator. Fluconazole at concentration of 50.0 μg/mL was effective against human lung and ovarian cancers.

IT **320-67-2**, Azacitidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(use of fluconazole for inhibiting growth of cancers)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 27 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:226942 HCAPLUS
DOCUMENT NUMBER: 126:216642
TITLE: Use of griseofulvin for inhibiting the growth of cancers
INVENTOR(S): Camden, James Berger
PATENT ASSIGNEE(S): Procter & Gamble Company, USA
SOURCE: PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9705870	A2	19970220	WO 1996-US12475	19960730 <--
WO 9705870	A3	19970417		

W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2228503	AA	19970220	CA 1996-2228503	19960730 <--
AU 9666834	A1	19970305	AU 1996-66834	19960730 <--
AU 713031	B2	19991118		
EP 841914	A2	19980520	EP 1996-926807	19960730 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BR 9609920	A	19990706	BR 1996-9920	19960730 <--
JP 11511136	T2	19990928	JP 1996-508495	19960730 <--

ZA 9606583	A	19970219	ZA 1996-6583	19960802 <--
NO 9800420	A	19980403	NO 1998-420	19980130 <--

PRIORITY APPLN. INFO.: US 1995-1839P P 19950803
US 1996-674181 A 19960716
WO 1996-US12475 W 19960730

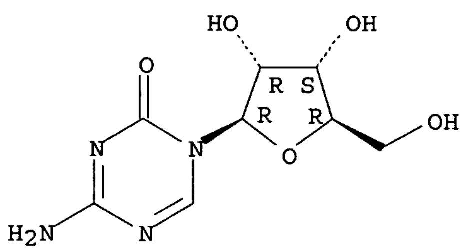
AB A pharmaceutical composition for the treatment of cancers or tumors in mammals is disclosed which comprises griseofulvin. A chemotherapeutic agent can be used in conjunction with griseofulvin as can potentiators. Griseofulvin can also be used to treat viral infections, either alone, in conjunction with other viral agents or with a potentiator.

IT **320-67-2**, Azacytidine
RL: MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(griseofulvin for inhibiting the growth of cancers)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 28 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:196180 HCAPLUS
DOCUMENT NUMBER: 126:207539
TITLE: Compositions and methods using phenylacetate compounds, alone or in combination with other therapeutic agents, for treating and preventing anemia, cancer, and other pathologies and modulating lipid metabolism
INVENTOR(S): Samid, Dvorit
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: U.S., 111 pp., Cont.-in-part of U.S. Ser. No. 135,661. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5605930	A	19970225	US 1994-207521	19940307 <--
US 6037376	A	20000314	US 1991-779744	19911021 <--
EP 1108427	A2	20010620	EP 2000-126980	19921013 <--
EP 1108427	A3	20040107		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, IE				
EP 1108428	A2	20010620	EP 2000-126981	19921013 <--
EP 1108428	A3	20040107		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, IE				
EP 1484058	A2	20041208	EP 2004-15994	19921013

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    EP 1484059          A2    20041208    EP 2004-15995          19921013
    EP 1484059          A3    20050420
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    US 5635532          A     19970603    US 1993-135661         19931012 <--
    IL 111251           A1    20040620    IL 1994-111251         19941011
    CA 2173976          AA    19950420    CA 1994-2173976        19941012 <--
    WO 9510271          A2    19950420    WO 1994-US11492        19941012 <--
    WO 9510271          A3    19950622
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            MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA,
            US, UZ
        RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU,
            MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN,
            TD, TG
    AU 9479737          A1    19950504    AU 1994-79737          19941012 <--
    AU 702051           B2    19950504
    EP 725635           A1    19960814    EP 1994-930694         19941012 <--
    EP 725635           B1    20041229
        R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
    JP 09506079         T2    19970617    JP 1995-511977         19941012 <--
    JP 3628694          B2    20050316
    NZ 275673           A     20000929    NZ 1994-275673         19941012 <--
    JP 2001253821       A2    20010918    JP 2001-69516          19941012 <--
    JP 2003119130       A2    20030423    JP 2002-302292         19941012
    AT 285760           E     20050115    AT 1994-930694         19941012
    EP 1523982          A2    20050420    EP 2004-30912          19941012
    EP 1523982          A3    20050427
        R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT
    PT 725635           T     20050531    PT 1994-930694         19941012
    ES 2233931          T3    20050616    ES 1994-930694         19941012
    US 5843994          A     19981201    US 1995-478264         19950607 <--
    US 5883124          A     19990316    US 1995-484615         19950607 <--
    US 5852056          A     19981222    US 1996-633833         19960410 <--
    JP 2005139208       A2    20050602    JP 2005-54743          20050228
    JP 2005139209       A2    20050602    JP 2005-54744          20050228
PRIORITY APPLN. INFO.:                    US 1991-779744      A2 19911021
                                          US 1993-135661      A2 19931012
                                          EP 1992-922550      A3 19921013
                                          US 1994-207521      A  19940307
                                          EP 1994-930694      A3 19941012
                                          JP 1995-511977      A3 19941012
                                          JP 2001-69516       A3 19941012
                                          WO 1994-US11492     W  19941012
                                          EP 2000-126980      A3 20001208
                                          EP 2000-126981      A3 20001208
OTHER SOURCE(S):          MARPAT 126:207539
```

AB Compns. and methods are disclosed for treating anemia, cancer, AIDS, or severe β-chain hemoglobinopathies by administering a therapeutically effective amount of phenylacetate or (pharmaceutically acceptable) derivs. thereof alone or in combination or in conjunction with other therapeutic agents including retinoids, hydroxyurea, and flavonoids. Also disclosed are intravesical methods of treatment of cancers with phenylacetate. Pharmacol.-acceptable salts alone or in combination, and methods of preventing AIDS and malignant conditions and inducing cell differentiation are also aspects of this invention. A product as a combined preparation of phenylacetate and a retinoid, hydroxyurea, or flavonoid (or other

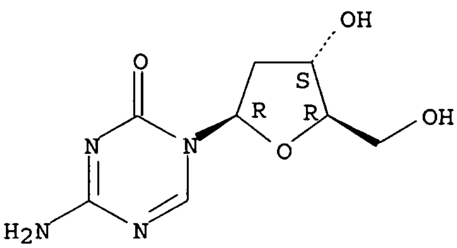
mevalonate pathway inhibitor) is disclosed for simultaneous, sep., or sequential use in treating a neoplastic condition in a subject. Also disclosed are methods of modulating lipid metabolism and/or reducing serum triglycerides in a subject using phenylacetate.

IT **2353-33-5**, 5-Aza-2'-deoxycytidine
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(suppression of carcinogenesis induced by; phenylacetate compds., alone or in combination, for treating and preventing anemia, cancer, and other pathologies and modulating lipid metabolism)

RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

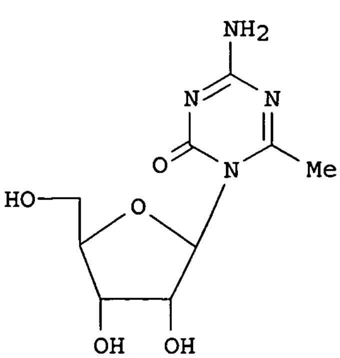
Absolute stereochemistry.



L33 ANSWER 29 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:187821 HCAPLUS
DOCUMENT NUMBER: 126:293552
TITLE: 6-Methyl-5-azacytidine synthesis, conformational properties, and biological activity. A comparison of molecular conformation with 5-azacytidine
AUTHOR(S): Hanna, Naeem B.; Zajicek, Jaroslav; Piskala, Alois
CORPORATE SOURCE: Inst. Organic Chem. Biochemistry, Academy of Sciences of the Czech Republic, Prague, 166 10, Czech Rep.
SOURCE: Nucleosides & Nucleotides (**1997**), 16(1 & 2), 129-144
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Dekker
DOCUMENT TYPE: Journal
LANGUAGE: English

GI



I

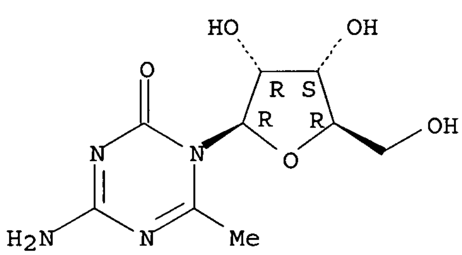
AB The title compound was prepared by the isocyanate procedure and the trimethylsilyl method. The measurement of 1H NMR spectrum of 6-methyl-5-azacytidine (I) revealed a preference of γt (46%) rotamer around C(5')-C(4') bond, a predominance of N conformation of the ribose ring (Keq 0.33) and a preference of syn conformation around the C-N glycosyl bond. An analogous measurement of 5-azacytidine has shown a preference of γ+ (60%) rotamer around the C(5')-C(4') bond, a predominance of N conformation of the ribose ring (Keq = 0.41) and a preference of anti conformation around the C-N glycosyl bond. I inhibits the growth of bacteria E. coli to the extent of 85% at 4000 μM concentration and the growth of LoVo/L, a human colon carcinoma cell line, to the extent of 30% at 100 μM concentration but did not inhibit L1210 cells at ≤100 μM concentration I exhibited no in vitro **antiviral** activity at ≤1 μM concentration

IT **105330-94-7P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis, conformation, and biol. activity of 6-methyl-5-azacytidine)

RN 105330-94-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-methyl-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

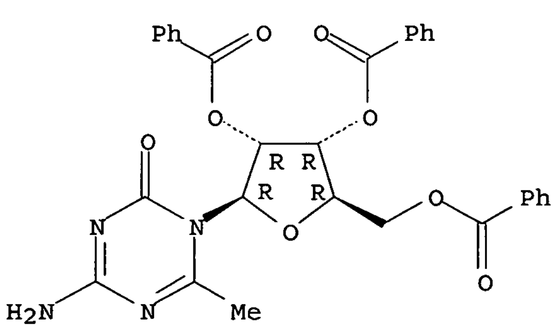


IT **105330-91-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis, conformation, and biol. activity of 6-methyl-5-azacytidine)

RN 105330-91-4 HCAPLUS

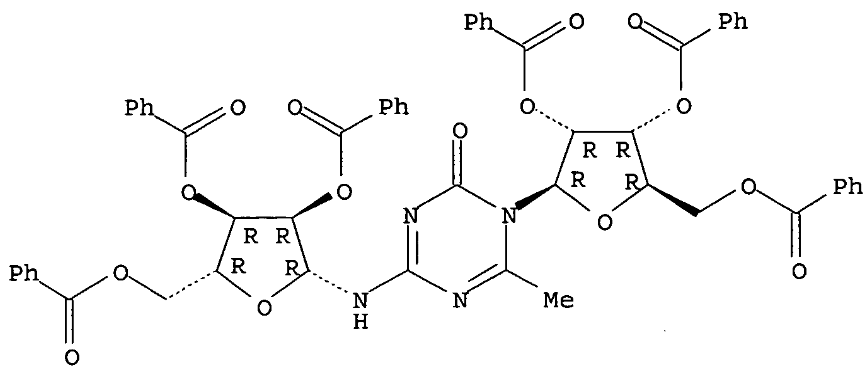
CN 1,3,5-Triazin-2(1H)-one, 4-amino-6-methyl-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 189129-05-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis, conformation, and biol. activity of 6-methyl-5-azacytidine)
RN 189129-05-3 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 6-methyl-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)-4-[(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 30 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:718343 HCAPLUS
DOCUMENT NUMBER: 126:1176
TITLE: A pharmaceutical composition containing n-chlorophenylcarbamates and n-chlorophenylthiocarbamates for inhibiting the growth of viruses and cancers
INVENTOR(S): Camden, James Berger
PATENT ASSIGNEE(S): Procter and Gamble Company, USA
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
WO 9632104	A1	19961017	WO 1996-US4956	19960411	<--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI					
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML					
US 5629341	A	19970513	US 1995-420913	19950412	<--
CA 2217953	AA	19961017	CA 1996-2217953	19960411	<--
CA 2217953	C	20011204			
AU 9653898	A1	19961030	AU 1996-53898	19960411	<--
AU 714056	B2	19991216			
ZA 9602878	A	19970317	ZA 1996-2878	19960411	<--
EP 820281	A1	19980128	EP 1996-910804	19960411	<--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI					

CN 1181701	A	19980513	CN 1996-193249		19960411 <--
BR 9604973	A	19980609	BR 1996-4973		19960411 <--
RU 2170577	C2	20010720	RU 1997-118418		19960411 <--
NZ 305785	A	20011026	NZ 1996-305785		19960411 <--
NO 9704696	A	19971212	NO 1997-4696		19971010 <--
AU 730920	B2	20010322	AU 2000-22315		20000315 <--
PRIORITY APPLN. INFO.:			US 1995-420913	A	19950412
			US 1995-1888P	P	19950804
			WO 1996-US4956	W	19960411

OTHER SOURCE(S): MARPAT 126:1176

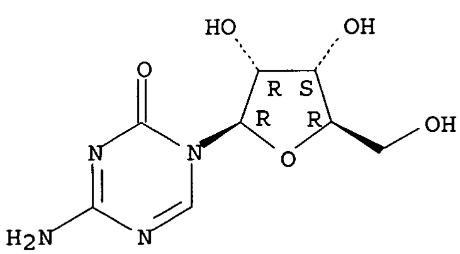
AB A pharmaceutical composition that inhibits the growth of cancers and tumors in mammals, particularly in human an warm-blooded animals is disclosed. The compns. is also effective against viruses. The composition contains N-chlorophenylcarbamates (I) and N-chlorophenylthiocarbamates (II) which are systemic herbicides. The composition can also contain I and II along with a chemotherapeutic agent and optionally a potentiator. The EC50 of of chloroprofam on colon tumor cell was 13.3 as compared to 0.003 ppm for adriamycin. Various pharmaceutical dosage forms are claimed.

IT **320-67-2**, Azacitidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(pharmaceutical composition containing chlorophenylcarbamates and chlorophenylthiocarbamates for inhibiting the growth of viruses and cancers)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 31 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:357021 HCAPLUS
DOCUMENT NUMBER: 125:26248
TITLE: Combination immunotoxin/antineoplastic agent therapy for B-lineage cancer
INVENTOR(S): Uckun, Fatih M.
PATENT ASSIGNEE(S): Regents of the University of Minnesota, USA
SOURCE: PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9605865	A1	19960229	WO 1995-US10940	19950822 <--

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        W:  AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI,
            GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD,
            MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK,
            TJ, TM
        RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT,
            LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE,
            SN, TD, TG
    AU 9535829          A1    19960314    AU 1995-35829         19950822 <--
PRIORITY APPLN. INFO.:                    US 1994-293846     A  19940822
                                          US 1995-517282     A  19950821
                                          WO 1995-US10940    W  19950822
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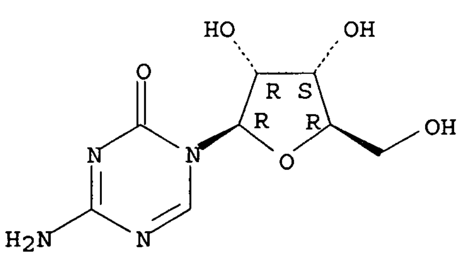
AB A method for the treatment of acute lymphoblastic leukemia comprises parenteral administration of a cell-type specific immunotoxin consisting of cytotoxic amount of pokeweed **antiviral** protein linked to monoclonal antibody B43 (0.1-250 μg/kg/day) in combination with antileukemic agent, i.e a class I immunosuppressive drug (cyclophosphamide) or an antimetabolite (methotrexate, trimetrexate, 5-fluorouracil, cytarabine, mercaptopurine, thioguanine, azacytidine, floxuridine, or 2-chlorodeoxyadenosine). The method decreases the post bone marrow transplant relapse rate by eliminating the radiation resistant and/or drug resistant residual leukemia burden. With slight modifications, the method of the present invention should be generally applicable to preparation of other pokeweed **antiviral** protein-monoclonal antibody conjugates for treatment of other types of cancer or AIDS.

IT **320-67-2**, Azacitidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(combination immunotoxin/antineoplastic agent for therapy of cancer and AIDS)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 32 OF 48 HCAPLUS

ACCESSION NUMBER: 1995:998391 HCAPLUS
DOCUMENT NUMBER: 124:45685
TITLE: Neplanocin A and related nucleosides for inhibition of human immunodeficiency virus
INVENTOR(S): Chiang, Peter K.; Mayers, Douglas L.; Burke, Donald S.
PATENT ASSIGNEE(S): Department of the Army, USA
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9528940	A1	19951102	WO 1994-US4436	19940422 <--

W: CA, JP, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: WO 1994-US4436 19940422

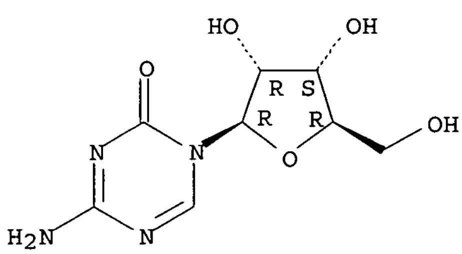
AB Pharmaceutical formulations of neplanocin A, 3-deazaneplanocin, 3-deazaaristeromycin, 4'-thioadenosine, and 5-azacytidine are useful for treatment of infections with HIV, especially AZT-resistant HIV. The anti-HIV activity of these compds. is enhanced by homocysteine and homocysteine lactone. Thus, p24 antigen production in HIV-1-infected peripheral blood mononuclear cells was inhibited by neplanocin A in vitro with IC50 = 0.0092 μM. The drugs form inclusion complexes with 2-hydroxy-β-cyclodextrin.

IT **320-67-2**, 5-Azacytidine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(neplanocin A and related nucleosides for inhibition of human immunodeficiency virus)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 33 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:416758 HCAPLUS
DOCUMENT NUMBER: 122:177853
TITLE: A systemic exposure-based alternative to the maximum tolerated dose for carcinogenicity studies of human therapeutics
AUTHOR(S): Contrera, Joseph F.; Jacobs, Abigail C.; Prasanna, Hullahalli R.; Mehta, Mehul; Schmidt, Wendelyn J.; De George, Joseph
CORPORATE SOURCE: Center Drug Evaluation and Research (CDER), U.S. Food and Drug Administration, Rockville, MD, USA
SOURCE: Journal of the American College of Toxicology (**1995**), 14(1), 1-10
CODEN: JACTDZ; ISSN: 0730-0913
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A systemic exposure-based alternative to the maximum tolerated dose (MTD) for high-dose selection in carcinogenicity studies for human therapeutics was accepted at the Second International Conference on Harmonization (ICH-2).

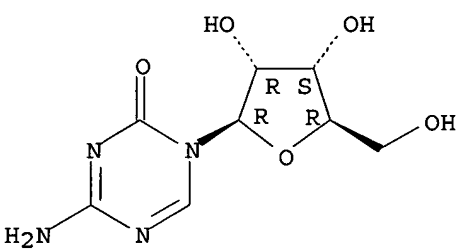
The systemic exposure-based alternative to the MTD is suitable for nongenotoxic compds. with low rodent toxicity that are metabolized similarly in rodents and humans. This is the first product of an evaluation of current stds. for rodent carcinogenicity studies of therapeutics. The relative systemic exposure is the ratio of the rat plasma area under the plasma concentration-time curve (AUC) at the MTD/human plasma AUC at the maximum recommended daily dose. An appropriate systemic exposure ratio for high-dose selection in carcinogenicity studies was empirically derived from the distribution of systemic exposure ratios attained by 35 compds. from 11 therapeutic categories in a Food and Drug Administration (FDA) database. Approx. one-third achieved a relative systemic exposure ratio <1 and two-thirds attained an exposure ratio of 10 or less, at the MTD. A systemic exposure ratio of at least 25 was accepted for high-dose selection in carcinogenicity studies at ICH-2. This ratio is high enough to detect all compds. with pos. studies in the FDA database and would detect IARC 1 and 2A carcinogenic drugs. A ratio of 25 exceeds the systemic exposure ratio attained by 75% of drugs tested at the MTD in the FDA database and represents an adequate margin of safety which can be attained by a significant proportion of drugs.

IT **320-67-2**, Azacitidine
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(systemic exposure-based alternative to maximum tolerated dose for carcinogenicity studies of human therapeutics)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 34 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:488770 HCAPLUS
DOCUMENT NUMBER: 119:88770
TITLE: Virus elimination from interspecific Arachis hybrids
AUTHOR(S): Dunbar, K. B.; Pinnow, D. L.; Morris, J. B.; Pittman, R. N.
CORPORATE SOURCE: SAA, ARS, Griffin, GA, 30223-1797, USA
SOURCE: Plant Disease (**1993**), 77(5), 517-20
CODEN: PLDIDE; ISSN: 0191-2917
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Some germ plasm collections of Arachis species and hybrids are maintained vegetatively. This study was conducted to develop protocols to eliminate virus from vegetatively maintained peanut. The culture of shoot meristems was effective for virus elimination from interspecific Arachis hybrids. Peanut mottle virus (PMV), peanut stripe virus (PStV), and tomato spotted wilt virus (TSWV) were not detected by DAS-ELISA in any plants regenerated from meristems treated with thermotherapy alone or combined with chemotherapy. Only 2.05 of the plants regenerated from untreated

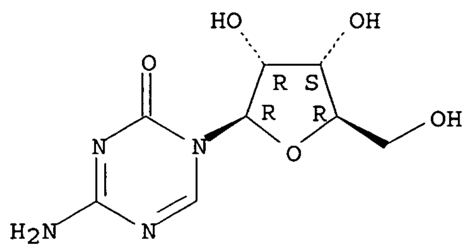
meristems contained PMV, and none contained PMV, and none contained PStV or TSWV. Shoot tip culture was not as effective as meristem culture for elimination of PMV. Plants regenerated from untreated shoot tips (1 cm long) of Arachis hybrids remained infected with PMV, whereas 38% of the plants regenerated from shoot tips treated with thermotherapy plus chemotherapy were infected with PMV. Arachis hybrids were more easily freed of TSWV and PStV than of PMV. Meristem culture, thermotherapy and chemotherapy were not required for elimination of TSWV and PSTV, and plants regenerated from untreated shoot tips were free of these viruses.

IT **320-67-2**, 5-Azacytidine
RL: BIOL (Biological study)
(growth and regeneration from shoot meristems of Arachis hybrids on media containing)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



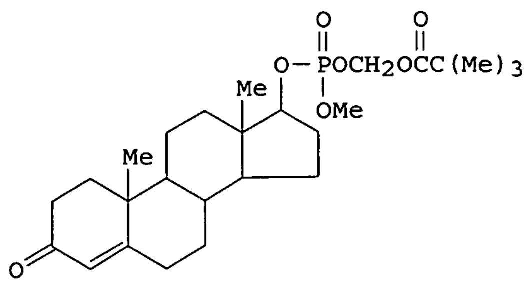
L33 ANSWER 35 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	1993:480205 HCAPLUS
DOCUMENT NUMBER:	119:80205
TITLE:	Targeted drug delivery via mixed phosphate derivatives
INVENTOR(S):	Bodor, Nicholas S.
PATENT ASSIGNEE(S):	University of Florida, USA
SOURCE:	PCT Int. Appl., 248 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9217185	A1	19921015	WO 1992-US2239	19920327 <--
W: AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US				
RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GN, GR, IT, LU, MC, ML, MR, NL, SE, SN, TD, TG				
CA 2108041	AA	19920930	CA 1992-2108041	19920327 <--
AU 9216748	A1	19921102	AU 1992-16748	19920327 <--
AU 668506	B2	19960509		
EP 577725	A1	19940112	EP 1992-909373	19920327 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
JP 06510020	T2	19941110	JP 1992-508920	19920327 <--
PRIORITY APPLN. INFO.:			US 1991-677304	A2 19910329
			WO 1992-US2239	A 19920327

OTHER SOURCE(S): MARPAT 119:80205

GI



I

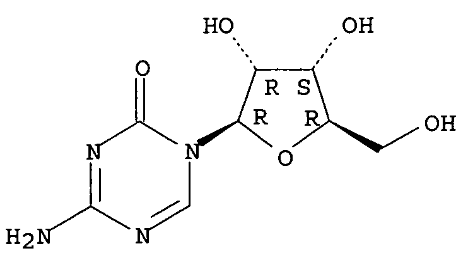
AB A drug having a reactive functional group is derivatized as phosphates, i.e. XP(:O)(OR1)(OCHR2OCOR3) (X = a drug residue; R1 = C1-8 alkyl, C6-10 aryl, C7-12 aralkyl; R2 = H, C1-8 alkyl, C6-10 aryl, C4-9 heteroaryl, etc.; R3 = C1-8 alkyl, C2-8 alkenyl, etc.) to be used for targeted drug delivery, especially to the brain. Thus, testosterone was treated with 2-chloromethyl-4-nitrophenylphosphorodichloridate and the obtained intermediate was reacted with MeOH, hydrolyzed, and treated with AgNO3. The Ag salt was reacted with iodomethyl pivalate to give testosterone phosphate triester (I).

IT **320-67-2D**, Azacitidine, phosphate derivs. **65886-71-7D**, Ara-AC, phosphate derivs.
RL: BIOL (Biological study)
(targeted drug delivery with)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

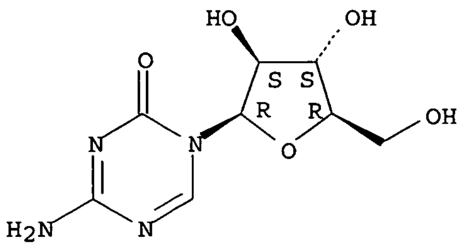
Absolute stereochemistry.



RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 36 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:225141 HCAPLUS

DOCUMENT NUMBER: 118:225141

TITLE: Epigenetic mechanisms of drug resistance: Drug-induced DNA hypermethylation and drug resistance

AUTHOR(S): Nyce, Jonathan; Leonard, Sherry; Canupp, Dawn; Schulz, Stefan; Wong, So

CORPORATE SOURCE: Sch. Med., East Carolina Univ., Greenville, NC, 27858, USA

SOURCE: Proceedings of the National Academy of Sciences of the United States of America (**1993**), 90(7), 2960-4

CODEN: PNASA6; ISSN: 0027-8424

DOCUMENT TYPE: Journal

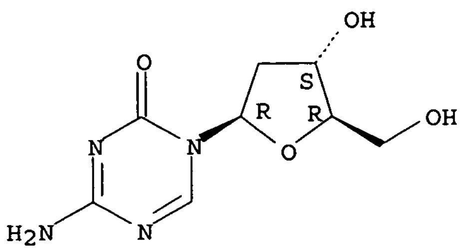
LANGUAGE: English

AB In a model system employing Chinese hamster V-79 cells, the DNA synthesis inhibitor 3'-azido-3'-deoxythymidine (BW A509U, AZT) was shown to induce genome-wide DNA hypermethylation, low-frequency silencing of thymidine kinase (TK; EC 2.7.1.21) gene expression, and resistance to AZT. Twenty-four hours of exposure of V-79 cells to 150 μM AZT led to >2-fold enhancement of genomic 5-methylcytosine levels and produced TK- epimutants at a rate ≈43-fold above background. Such AZT-induced TK- epimutants were shown to be severely reduced in their capacity to activate AZT to its proximate **antiviral** form, AZT 5'-monophosphate, as compared with the TK+ parental cell line from which they were derived. TK- clones isolated under these conditions were shown to be 9- to 24-fold more resistant to the cytotoxic effects of AZT than the parental TK+ cell line and showed collateral resistance to 5-fluoro-2'-deoxyuridine. Three of four TK- epimutants could be reactivated at very high frequency (8-73%) to the TK+ AZT-sensitive phenotype by 24 h of exposure to the demethylating agent 5-azadeoxycytidine (5-azadC), implying that drug-induced DNA hypermethylation, rather than classical mutation, was involved in the original gene-silencing event in these three clones. These 5-azadC-induced TK+ revertants concomitantly regained the ability to metabolize AZT to its 5'-monophosphate. RNA slot blot analyses indicated that the four AZT-induced TK- clones expressed 8.9%, 15.6%, 17.8%, and 11.1% of the parental level of TK mRNA. The three clones that were reactivatable by 5-azadC showed reexpression of TK mRNA to levels 84.4%, 51.1%, and 80.0% that of the TK+ parental cell line. These expts. show that one potential mechanism of drug resistance involves drug-induced DNA hypermethylation and resulting transcriptional inactivation of cellular genes whose products are required for drug activation.

IT **2353-33-5**, 5-Azadeoxycytidine
RL: BIOL (Biological study)
(azidodeoxythymidine resistance of V-79 reversal by, as demethylating agent)

RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 37 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:205218 HCAPLUS
DOCUMENT NUMBER: 118:205218
TITLE: Treatment of chemotherapeutic agent and **antiviral** agent toxicity with acylated pyrimidine nucleosides
INVENTOR(S): Von Borstel, Reid W.; Bamat, Michael K.
PATENT ASSIGNEE(S): Pro-Neuron, Inc., USA
SOURCE: PCT Int. Appl., 130 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 13
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
WO 9301202	A1	19930121	WO 1992-US5324	19920625	<--
W: AU, BR, CA, FI, JP, KR, NO					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE					
CA 2111571	AA	19930121	CA 1992-2111571	19920625	<--
CA 2111571	C	20050823			
CA 2504078	AA	19930121	CA 1992-2504078	19920625	<--
AU 9222544	A1	19930211	AU 1992-22544	19920625	<--
AU 667676	B2	19960404			
EP 594667	A1	19940504	EP 1992-914215	19920625	<--
EP 594667	B1	20010919			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE					
JP 06508846	T2	19941006	JP 1993-502244	19920625	<--
JP 2584947	B2	19970226			
AT 205850	E	20011015	AT 1992-914215	19920625	<--
ES 2160579	T3	20011116	ES 1992-914215	19920625	<--
ZA 9204975	A	19930428	ZA 1992-4975	19920703	<--
IL 102407	A1	19970110	IL 1992-102407	19920703	<--
CN 1071577	A	19930505	CN 1992-108868	19920704	<--
CN 1050996	B	20000405			
IN 175688	A	19950812	IN 1992-CA473	19920706	<--
IN 177670	A	19970215	IN 1994-CA701	19940902	<--
HK 1003424	A1	20020215	HK 1998-102605	19980327	<--
AU 9952624	A1	19991202	AU 1999-52624	19991001	<--
GR 3036749	T3	20011231	GR 2001-401606	20010927	<--
AU 2005232288	A1	20051201	AU 2005-232288	20051110	

PRIORITY APPLN. INFO.:	US 1991-724340	A	19910705
	US 1992-903107		19920625
	CA 1992-2111571	A3	19920625
	WO 1992-US5324	A	19920625
	IN 1992-CA473	A1	19920706
	AU 1995-29150	A3	19950630
	AU 2002-320811	A3	20021223

OTHER SOURCE(S): MARPAT 118:205218

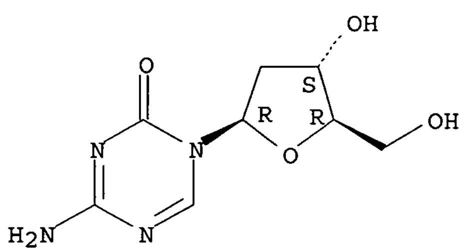
AB The toxicity of **antiviral** and antineoplastic agents, resulting from their damage to the hematopoietic system or mucosal tissue, is prevented or treated with acylated derivs. of nonmethylated pyrimidine nucleosides. These derivs. may themselves be antineoplastic, **antiviral**, or antimalarial agents; they may be administered together with inhibitors of uridine phosphorylase, of cytidine deaminase, or of nucleotide transport. Thus, oral administration of triacetyluridine (500 mg/kg 8 times in 2 days) rescued mice from the hematol. toxicity of 5-fluorouracil (150 mg/kg i.p.), as shown by leukocyte and platelet counts.

IT **2353-33-5**, 5-Aza-2'-deoxycytidine **65886-71-7**
RL: PRP (Properties)
(toxicity of, acylated nonmethylated pyrimidine nucleosides for treatment of)

RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

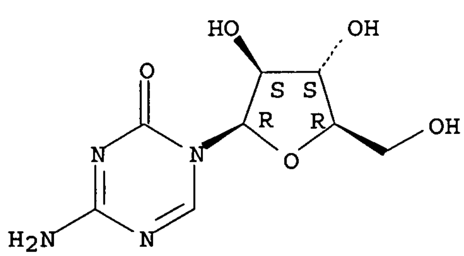
Absolute stereochemistry.



RN 65886-71-7 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 38 OF 48 HCAPLUS

ACCESSION NUMBER: 1992:75752 HCAPLUS

DOCUMENT NUMBER: 116:75752

TITLE: 5-Azacytidine induction of a cellular heat shock protein and expression of the major immediate early protein of human cytomegalovirus in Vero cells
AUTHOR(S): Zerbini, M.; Musiani, M.; Gibellini, D.; Gentilomi, G.; La Placa, M.
CORPORATE SOURCE: Ist. Microbiol., Univ. Bologna, Bologna, Italy
SOURCE: Microbiologica (**1991**), 14(4), 287-94
CODEN: MIBLDR; ISSN: 0391-5352
DOCUMENT TYPE: Journal
LANGUAGE: English

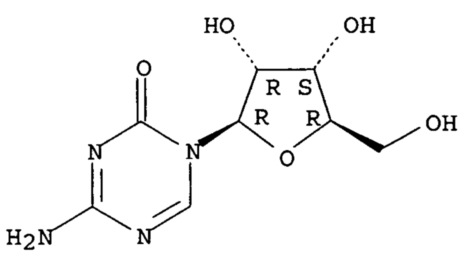
AB Treatment of human cytomegalovirus infected Vero cells with 5-azacytidine induces the expression of the major immediate early protein (68K) of human cytomegalovirus by enhancing a 72K cellular heat shock protein.

IT **320-67-2**, 5-Azacytidine
RL: BIOL (Biological study)
(induction of cellular heat shock protein and expression of major immediate early protein of human cytomegalovirus by, in Vero cells)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:67168 HCAPLUS
DOCUMENT NUMBER: 116:67168
TITLE: Plant extracts for decreasing side effects of **antiviral** drugs and increasing the immune function
INVENTOR(S): Liu, Yaguang
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5071839	A	19911210	US 1987-115872	19871102 <--
PRIORITY APPLN. INFO.:			US 1987-115872	19871102

AB A composition for preventing side effects of virucides and increasing the immune functions is composed of 2 ingredients: (1) polysaccharide of Wang Qi derived from a plant, Astragalus membranaceus Bge and A. chrysopterus Bge and ginsenoside derived from Panax quinquefolium and P. ginseng. A mixture containing polysaccharides of Wang Qi 20-80 and ginsenoside 20-80 % can be formulated into tablets, capsules, or syrups by conventional methods.

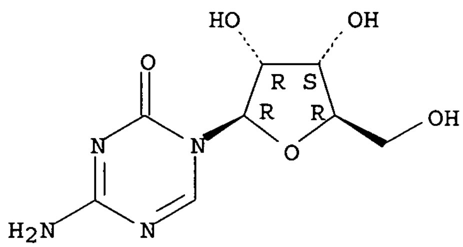
Thus, an ethanol extract of ginseng powder was worked up to give a ginsenoside and a water extract of Astragalus for the polysaccharide. A mixture containing ginsenoside and the polysaccharide was coadministered to mice
with a virucide (5'-azacytidine, 2',3'-dideoxyadenoside, cyclophosphamide, cytarabine, and ribavirin, resp.) and the effects on natural killer cells, bone-marrow cells, lymphoblastoid transformation, rosette formation, and phagocytosis of peritoneal macrophage were observed

IT **320-67-2**
RL: PRP (Properties)
(side effect of, prevention of, ginsenoside and polysaccharides from Astragalus for)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



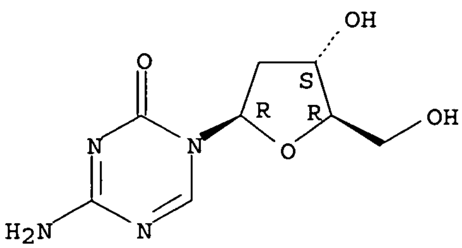
L33 ANSWER 40 OF 48 HCAPLUS

ACCESSION NUMBER: 1991:441448 HCAPLUS
DOCUMENT NUMBER: 115:41448
TITLE: Comparison of the substrate specificities of human thymidine kinase 1 and 2 and deoxycytidine kinase toward **antiviral** and cytostatic nucleoside analogs
AUTHOR(S): Eriksson, Staffan; Kierdaszuk, Borys; Munch-Petersen, Birgitte; Oeberg, Bo; Johansson, Nils Gunnar
CORPORATE SOURCE: Med. Nobel Inst., Karolinska Inst., Stockholm, Swed.
SOURCE: Biochemical and Biophysical Research Communications (**1991**), 176(2), 586-92
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Deoxynucleoside kinases are required for the 5'-phosphorylation of deoxynucleoside analogs used in chemotherapy. Cytoplasmic thymidine kinase (TK1), deoxycytidine kinase (dCK) and mitochondrial thymidine kinase (TK2) were completely purified from human leukemic spleen and their capacities to phosphorylate 43 nucleosides analogs were compared. TK1 showed the most restricted substrate specificity but tolerated 3'-modifications of the sugar ring and some 5-substitutions of the pyrimidine ring. TK2 showed a much broader specificity and phosphorylated pyrimidine bases with bulky 5-substitutions, including cytosine analogs, while sugar analogs with substituents other than OH in the 2' and 3' positions were very poor substrates. DCK showed a very broad specificity phosphorylating several cytosine analogs with 2' and 3' modifications as well as acyclic sugar analogs. Purine deoxyribonucleosides were also efficiently phosphorylated by dCK but in this case sugar modifications led to drastically decreased activity.

IT 2353-33-5
RL: BIOL (Biological study)
(phosphorylation of, by human thymidine kinase 1 and 2 and deoxycytidine kinase)
RN 2353-33-5 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 41 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:400778 HCAPLUS
DOCUMENT NUMBER: 115:778
TITLE: Covalently-linked complexes and methods for enhanced cytotoxicity and imaging
INVENTOR(S): Anderson, David C.; Morgan, A. Charles; Abrams, Paul G.; Nichols, Everett J.; Fritzberg, Alan R.
PATENT ASSIGNEE(S): NeoRx Corp., USA
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
EP 359347	A2	19900321	EP 1989-250014		19890814	<--
EP 359347	A3	19900418				
EP 359347	B1	19921223				
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE						
US 5135736	A	19920804	US 1988-232337		19880815	<--
US 5169933	A	19921208	US 1989-390241		19890807	<--
CA 1334513	A1	19950221	CA 1989-608198		19890811	<--
JP 02124833	A2	19900514	JP 1989-209992		19890814	<--
AT 83669	E	19930115	AT 1989-250014		19890814	<--
PRIORITY APPLN. INFO.:			US 1988-232337	A	19880815	
			EP 1989-250014	A	19890814	

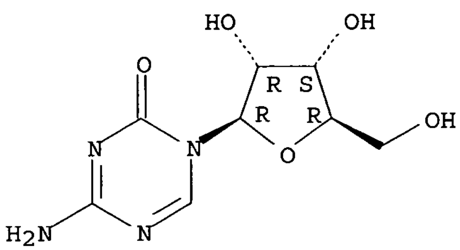
AB Covalently-linked complexes (CLCs) for targeting a defined population of cells comprise a targeting protein (e.g. antibody, hormone, enzyme, etc.), a cytotoxic agent (e.g. radionuclide, toxin, drug, etc.) an enhancing moiety capable of enhancing CLC-target cell interaction (e.g. a translocating/internalizing moiety, an anchoring peptide, membrane-soluble hydrophobic mol., etc.). The CLCs are used to enhance in vivo cytotoxicity and imaging (no data). Translocating peptide, Cys-Gly-Glu-Ala-Ala-Leu-Ala(Glu-Ala-Leu-Ala)4-Glu-Ala-Leu-Glu-Ala-Leu-Ala-Ala-NH2, is conjugated via succinimidyl 4(N-maleimidemethyl)cyclohexane-1-carboxylate (SMCC) to reduced toxin A chain. The conjugate is reacted

with iminothiolane to generate further thiol groups which are then bonded to reduced antibody to prepare translocating peptide-ricin A chain-antibody CLC.

IT **320-67-2D**, Azacitidine, conjugates with targeting protein and target cell interaction enhancer **62488-57-7D**, conjugates with targeting protein and target cell interaction enhancer **65886-71-7D**, Fazarabine, conjugates with targeting protein and target cell interaction enhancer
RL: BIOL (Biological study)
(cell targeting with, for enhanced cytotoxicity and imaging)

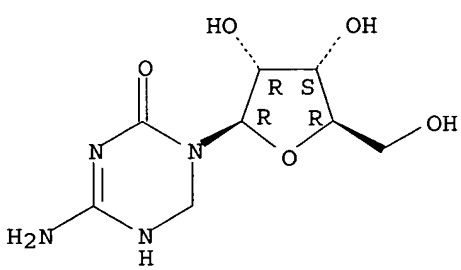
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



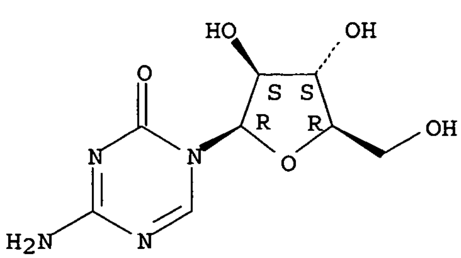
RN 62488-57-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65886-71-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 42 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:171819 HCAPLUS
DOCUMENT NUMBER: 112:171819
TITLE: Susceptibilities of zidovudine-susceptible and -resistant human immunodeficiency virus isolates to **antiviral** agents determined by using a quantitative plaque reduction assay
AUTHOR(S): Larder, Brendan A.; Chesebro, Bruce; Richman, Douglas D.
CORPORATE SOURCE: Dep. Mol. Sci., Wellcome Res. Lab., Beckenham/Kent, UK
SOURCE: Antimicrobial Agents and Chemotherapy (**1990**), 34(3), 436-41
CODEN: AMACCQ; ISSN: 0066-4804
DOCUMENT TYPE: Journal
LANGUAGE: English

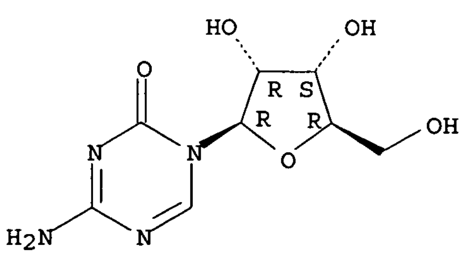
AB Conventional assays based on infection of T-cell lymphoblastoid lines with tissue culture-adapted strains of human immunodeficiency virus (HIV) are used successfully to discover potent inhibitors of HIV replication. Such assays are not easily applied to testing the susceptibilities of clin. HIV isolates to inhibitors because of differences in replication rates and cytotoxicity. Conventional HIV assays should be used with caution when the zidovudine susceptibility of clin. isolates is assessed. An assay based on plaque reduction in CD4+ HeLa cell monolayers was validated to determining susceptibilities of HIV to a large number of inhibitors in this system. IC50 values for HIV type 1 and 2 strains derived from plaque reduction data were in good agreement with susceptibility data obtained by using conventional assays with T-cell lines. The susceptibilities of previously identified azidovudine-resistant HIV isolates to a large group of inhibitors, including nonnucleosides, such as interferons and soluble CD4, were tested by using a plaque reduction assay in CD4+ HeLa cells. An extremely narrow range of cross-resistance was observed and it was limited to nucleoside analogs containing a 3'-azido group. These data suggest combinations of inhibitors to delay the appearance of drug resistance.

IT **320-67-2**, Azacytidine
RL: BIOL (Biological study)
(human immunodeficiency virus isolates inhibition by, assay for)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 43 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:111605 HCAPLUS
DOCUMENT NUMBER: 112:111605

TITLE: 5-Azacytidine and 5-azadeoxycytidine inhibit human immunodeficiency virus type 1 replication in vitro

AUTHOR(S): Bouchard, Jacques; Walker, Mary Clare; Leclerc, Jean Marie; Lapointe, Normand; Beaulieu, Raymond; Thibodeau, Lise

CORPORATE SOURCE: Inst. Natl. Rech. Sci.-Sante, Univ. Quebec, Pointe-Claire, QC, H9G 1R6, Can.

SOURCE: Antimicrobial Agents and Chemotherapy (**1990**), 34(2), 206-9
CODEN: AMACCQ; ISSN: 0066-4804

DOCUMENT TYPE: Journal

LANGUAGE: English

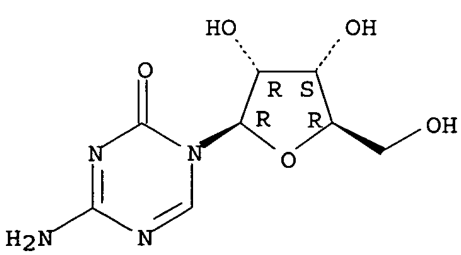
AB Chemotherapeutic agents which affect the integration, stability, or inducibility of the human immunodeficiency virus (HIV) provirus would have considerable value in treating acquired immunodeficiency syndrome. Two nucleoside analogs of cytosine, 5-azacytidine and 5-azadeoxycytidine, which seem to have such value because of their capabilities to affect both the stability and the methylation patterns of the nucleic acids into which they are incorporated, were tested for their ability to inhibit the replication of HIV type 1 (HIV-1) in human CEM T cells in vitro. 5-Azadeoxycytidine (1 μM) almost completely inhibited HIV replication in CEM cells, by the criteria of reduced viral antigen expression and decreased supernatant reverse transcriptase activity, with little toxicity for the treated cells. 5-Azacytidine (1 μM) also inhibited HIV replication, but less effectively. When added ≥2 h after CEM cells were infected with HIV-1, both 5-azacytosine derivs. were less effective than they were when added at the time of infection. Even 2 h of exposure to 5-azadeoxycytidine was sufficient for inhibition of HIV replication. Although long exposure to either analog at concns. of 1 μM would result in pronounced cellular cytotoxicity, the fact that short exposures to the same dose of drug inhibit HIV replication but are not toxic for the cells implies that cellular toxicity itself is not an important mechanism of the **antiviral** action of the analogs.

IT **320-67-2**, 5-Azacytidine **2353-33-5**, 5-Azadeoxycytidine
RL: BIOL (Biological study)
(human immunodeficiency virus type 1 replication response to)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

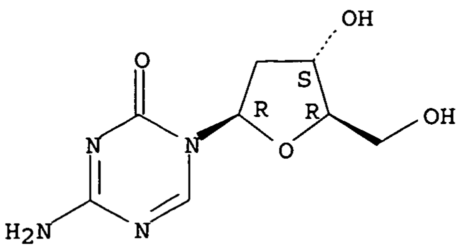
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 44 OF 48 HCAPLUS

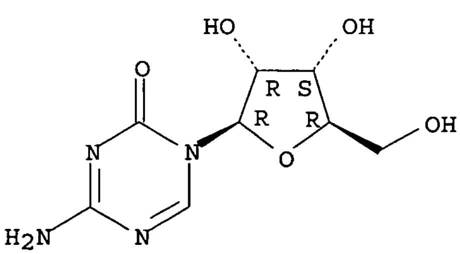
ACCESSION NUMBER: 1987:508862 HCAPLUS
DOCUMENT NUMBER: 107:108862
TITLE: Inhibition of HTLV-III replication in cell cultures
AUTHOR(S): Sarin, P. S.; Sun, D.; Thornton, A.; Taguchi, Y.
CORPORATE SOURCE: Lab. Tumor Cell Biol., Natl. Cancer Inst., Bethesda, MD, 20892, USA
SOURCE: NATO ASI Series, Series A: Life Sciences (**1986**), 120(New Exp. Modalities Control Neoplasia), 329-42
CODEN: NALSDJ; ISSN: 0258-1213
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB Various inhibitors of human T-cell leukemia virus-III replication in culture are described. These include those that interfere with virus attachment to the cells, those that interfere with reverse transcription, and inhibitors of DNA and RNA transcription. Some of the relevant data are reviewed.

IT **320-67-2**, NSC 103-627 **62488-57-7**, NSC 264-880 **65886-71-7**, NSC 281-272
RL: BIOL (Biological study)
(human T-cell leukemia virus-III infection inhibition by)

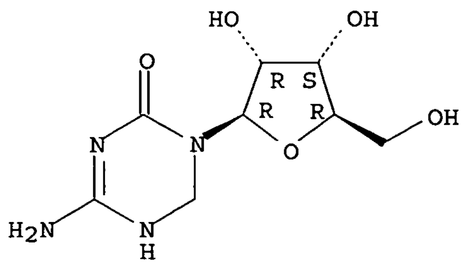
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



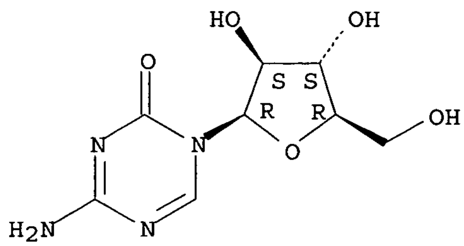
RN 62488-57-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-3,6-dihydro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65886-71-7 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-arabinofuranosyl- (9CI) (CA INDEX NAME)

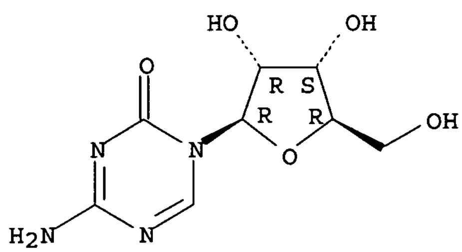
Absolute stereochemistry.



L33 ANSWER 45 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:419347 HCAPLUS
DOCUMENT NUMBER: 107:19347
TITLE: Modifications of nucleic acid precursors that inhibit plant virus multiplication
AUTHOR(S): Dawson, William O.; Boyd, Carol
CORPORATE SOURCE: Dep. Plant Pathol., Univ. California, Riverside, CA, 92521, USA
SOURCE: Phytopathology (**1987**), 77(3), 477-80
CODEN: PHYTAJ; ISSN: 0031-949X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The relationship between chemical modifications of normal nucleic acid base or nucleoside precursors and ability to inhibit multiplication of tobacco mosaic virus or cowpea chlorotic mottle virus in disks from mech. inoculated leaves was tested with 131 analogs. Chems. tested were selected from 10 general classes of modifications to determine the types of modifications of normal nucleic acid precursors that have greater probabilities of inhibiting virus multiplication. No inhibitory chems. were found in several classes. Classes of modifications with the highest proportion of **antiviral** activity were modification of the sugar moiety (five of 13 chemical were inhibitory) and addition of abnormal side groups (three of seven chems. were inhibitory). Eight new inhibitors of virus multiplication were identified: 6-aminocytosine; 6-ethylmercaptopurine; isopentenyladenosine; 2-thiopyrimidine; 2,4-dithiomercaptopurine; melamine; 5'-iodo-5'-deoxyadenosine; and 5'-methyl-5'-deoxythioadenosine.
IT **320-67-2**, 5-Azacytidine
RL: BIOL (Biological study)
(cowpea chlorotic mottle virus and tobacco mosaic virus multiplication

response to, structure in relation to)
RN 320-67-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

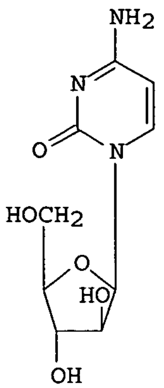
Absolute stereochemistry.



L33 ANSWER 46 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1976:433360 HCAPLUS
DOCUMENT NUMBER: 85:33360
TITLE: Arabinofuranosyl compounds
INVENTOR(S): Moffatt, John G.; Russell, Alan F.
PATENT ASSIGNEE(S): Syntex (U.S.A.), Inc., USA
SOURCE: Ger. Offen., 45 pp. Division of Ger. Offen. 2,112,724. CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
DE 2166717	A1	19760226	DE 1971-2166717		19710317	<--
US 3709874	A	19730109	US 1970-21206		19700319	<--
FR 2085721	A5	19711231	FR 1971-9546		19710318	<--
FR 2085721	B1	19751010				
ES 389383	A1	19740316	ES 1971-389383		19710318	<--
CH 559205	A	19750228	CH 1974-11583		19710319	<--
CH 559206	A	19750228	CH 1974-11584		19710319	<--
CH 567032	A	19750930	CH 1971-4075		19710319	<--
GB 1335492	A	19731031	GB 1971-24761		19710419	<--
GB 1335493	A	19731031	GB 1972-49147		19710419	<--
CA 1022925	A2	19771220	CA 1973-184773		19731101	<--
PRIORITY APPLN. INFO.:			US 1970-21206	A	19700319	
			CA 1971-106231	A3	19710225	

GI



I

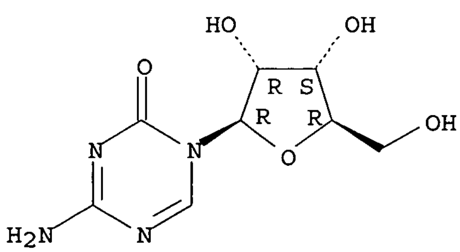
AB 1-β-D-arabinofuranosylcytosine (I), useful as a virucide (no data) was prepared by treatment of cytidine with AcOCMe2COR (R = Cl, Br, F, iodo) to give 3'-O-acetyl-O2,2'-cyclocytidine which was hydrolyzed and cleaved with NH3. 5-Azacytidine was acetylated with Ac2O to give the N4-acetyl derivative which was then chlorinated with CCl4 in DMF containing Ph3P to give N4-acetyl-5'-chloro-5'-deoxy-5-azacytidine.

IT **320-67-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation of)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

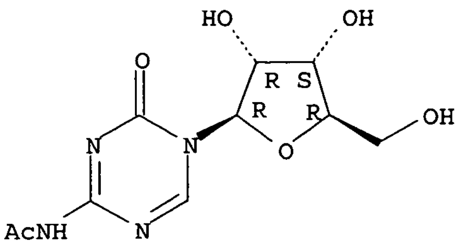


IT **59712-54-8P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and chlorination of)

RN 59712-54-8 HCAPLUS

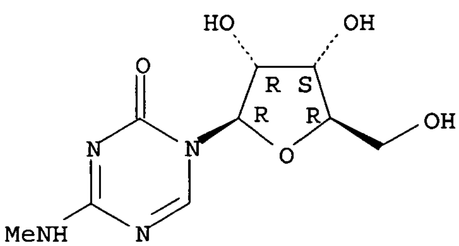
CN Acetamide, N-(4,5-dihydro-4-oxo-5-β-D-ribofuranosyl-1,3,5-triazin-2-yl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



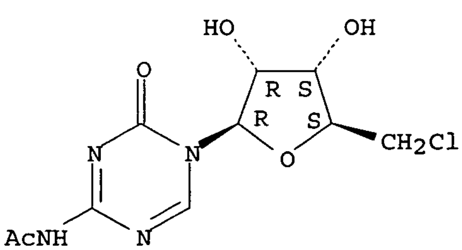
IT 27826-76-2P 35808-28-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 27826-76-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-β-D-ribofuranosyl- (9CI)
(CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 35808-28-7 HCAPLUS
CN Acetamide, N-[5-(5-chloro-5-deoxy-β-D-ribofuranosyl)-4,5-dihydro-4-oxo-1,3,5-triazin-2-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 47 OF 48 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:46467 HCAPLUS
DOCUMENT NUMBER: 76:46467
TITLE: **Antiviral** arabinofuranosyl compounds
INVENTOR(S): Moffatt, John G.; Russell, Alan F.
PATENT ASSIGNEE(S): Syntex Corp.
SOURCE: Ger. Offen., 65 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

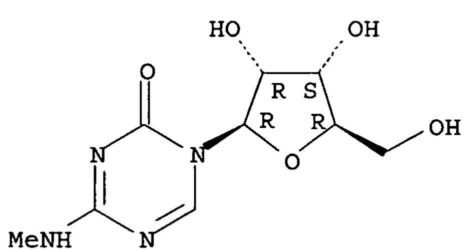
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
DE 2112724	A	19711118	DE 1971-2112724		19710317	<--
US 3709874	A	19730109	US 1970-21206		19700319	<--
FR 2085721	A5	19711231	FR 1971-9546		19710318	<--
FR 2085721	B1	19751010				
ES 389383	A1	19740316	ES 1971-389383		19710318	<--
CH 559205	A	19750228	CH 1974-11583		19710319	<--
CH 559206	A	19750228	CH 1974-11584		19710319	<--
CH 567032	A	19750930	CH 1971-4075		19710319	<--
GB 1335492	A	19731031	GB 1971-24761		19710419	<--
GB 1335493	A	19731031	GB 1972-49147		19710419	<--
CA 1022925	A2	19771220	CA 1973-184773		19731101	<--
PRIORITY APPLN. INFO.:			US 1970-21206	A	19700319	
			CA 1971-106231	A3	19710225	

AB 2,2'-Anhydro-1-(3'-O-acyl-β-D-arabinofuranosyl)cytosine and (S)-2,2'-anhydro-1-(3'-O-acyl-β-D-arabinofuranosyl)-2-thiocytosine (I) salts have **antiviral** and cytotoxic properties. Thus, 2-acetoxy-2-methylpropionyl chloride was added to cytidine in MeCN at 80° with stirring and the mixture kept 15 min to give 3'-O-acetyl-O2,2'-cyclocytidine (II) hydrochloride (III). The HBr and HF salts of II and the HCl and HBr salts of the 3'-O-benzoyl analog of II were also prepared III in H2O was kept overnight with concentrated NH4OH at room temperature, the mixture evaporated, and the residue in MeOH passed through a column of Dowex AG 1-X2 (OH-) to give 1-β-D-arabinofuranosyl)cytosine (IV). IV was also prepared from the HBr, HF, and HI salts of I and the HCl and HBr salts of the 3'-O-benzoyl analog of II. Also prepared were the 3'-O-acetyl analog (V) of I HCl and HF salts. V was used to prepare 1-(2-thio-β-D-arabinofuranosyl)cytidine HClalt. Also prepared were N4-methyl-, N4-acetyl-, and N4-acetyl-5'-chloro-5'-deoxy-5-azacytidine.

IT **27826-76-2P 35808-28-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

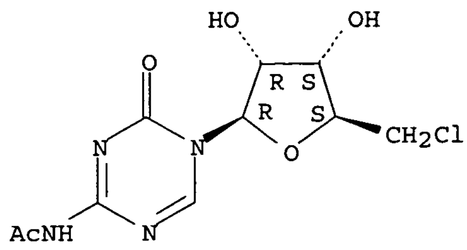
RN 27826-76-2 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-(methylamino)-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 35808-28-7 HCAPLUS
CN Acetamide, N-[5-(5-chloro-5-deoxy-β-D-ribofuranosyl)-4,5-dihydro-4-oxo-1,3,5-triazin-2-yl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



ACCESSION NUMBER: 1972:14862 HCAPLUS
DOCUMENT NUMBER: 76:14862
TITLE: 5-Azapyrimidine nucleosides
INVENTOR(S): Vorbrueggen, Helmut; Niedballa, Ulrich
PATENT ASSIGNEE(S): Schering A.-G.
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
DE 2012888	A	19710930	DE 1970-2012888		19700314	<--
DE 2012888	B2	19800710				
DE 2012888	C3	19810402				
SU 374828	D	19730320	SU 1971-1619738		19710203	<--
FI 56018	C	19791112	FI 1971-333		19710208	<--
FI 56018	B	19790731				
CS 162741	P	19750715	CS 1971-1030		19710211	<--
ES 388193	A1	19730501	ES 1971-388193		19710212	<--
ZA 7101084	A	19711027	ZA 1971-1084		19710219	<--
CA 946379	A1	19740430	CA 1971-106797		19710303	<--
IL 36363	A1	19740516	IL 1971-36363		19710308	<--
AT 313481	B	19740225	AT 1971-2062		19710310	<--
CH 552606	A	19740815	CH 1971-3522		19710310	<--
DK 152134	B	19880201	DK 1971-1152		19710311	<--
DK 152134	C	19880801				
BE 764179	A1	19710913	BE 1971-100839		19710312	<--
FR 2085707	A5	19711231	FR 1971-8686		19710312	<--
FR 2085707	B1	19750418				
HU 164144	P	19731228	HU 1971-SE325		19710312	<--
US 3817980	A	19740618	US 1971-123836		19710312	<--
SE 405253	C	19790308	SE 1971-3210		19710312	<--
SE 405253	B	19781127				
PL 81543	P	19750830	PL 1971-146878		19710313	<--
NL 7103459	A	19710916	NL 1971-3459		19710315	<--
NL 180835	B	19861201				
NL 180835	C	19870504				
JP 55027077	B4	19800717	JP 1971-14313		19710315	<--
GB 1351003	A	19740424	GB 1971-23387		19710419	<--
PRIORITY APPLN. INFO.:			DE 1970-2012888	A	19700314	

OTHER SOURCE(S): CASREACT 76:14862
GI For diagram(s), see printed CA Issue.
AB Cytotoxic, immune suppressive, antiinflammatory, antipsoriatic, and

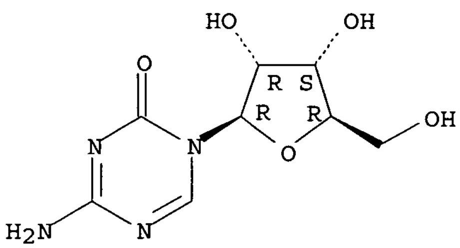
antiviral title compds. (I) (X = NH2, OH, or OMe, Z = acylated or unacylated ribofuranosyl or glucopyranosyl) were prepared in 51.9-77.5% yield by reaction of the corresponding 1-O-acylated carbohydrate with 2,4-dimethoxy-s-triazine and NH3 or with 5-azacytosine bissilyl derivative (II) in the presence of SnCl4 and optionally cleavage of protective groups by known methods. Thus, II in ClCH2CH2Cl(III) and SnCl4 in III were successively added to 1-O-acetyl-2,3,5-tri-O-benzoylribofuranose in III and the mixture was stirred 2 hr at room temperature to give 69.8% I (X = NH2, Z = 2,3,5-tri-O-benzoyl-β-D-ribofuranosyl). Similarly prepared were 8 other I.

IT **320-67-2P 2353-33-5P 10302-79-1P**
28998-36-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 320-67-2 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

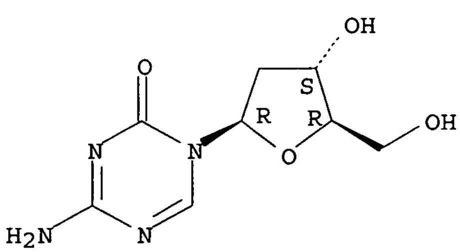
Absolute stereochemistry.



RN 2353-33-5 HCAPLUS

CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-β-D-erythro-pentofuranosyl)- (9CI) (CA INDEX NAME)

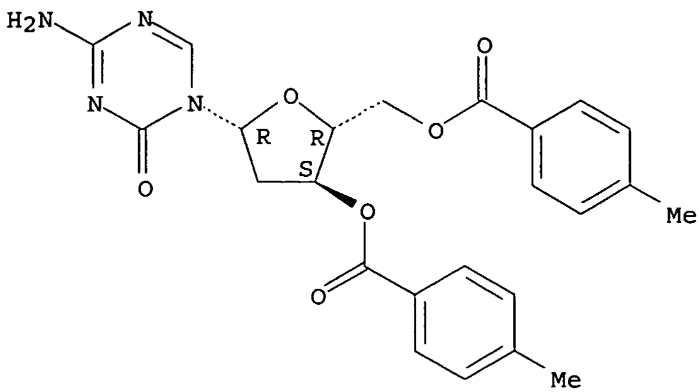
Absolute stereochemistry.



RN 10302-79-1 HCAPLUS

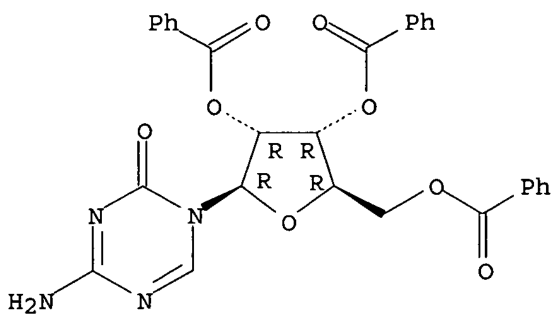
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-[2-deoxy-3,5-bis-O-(4-methylbenzoyl)-β-D-erythro-pentofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 28998-36-9 HCAPLUS
CN 1,3,5-Triazin-2(1H)-one, 4-amino-1-(2,3,5-tri-O-benzoyl-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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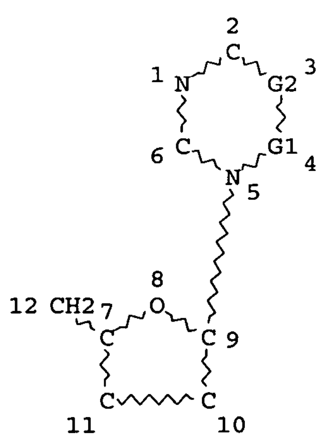
L1 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
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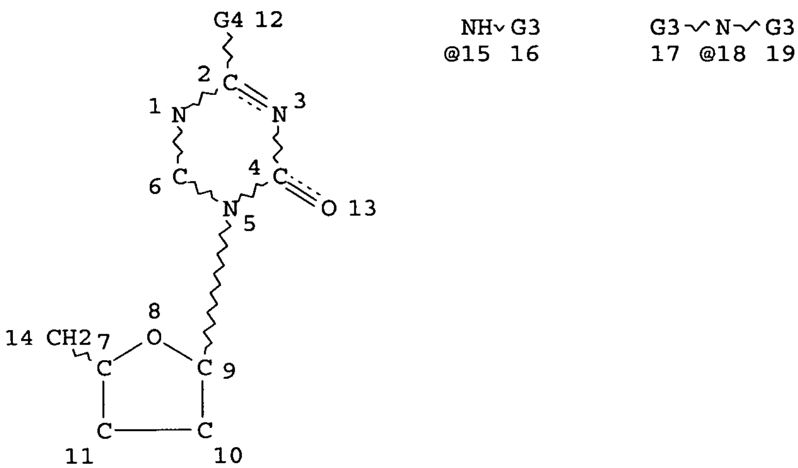
L9 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
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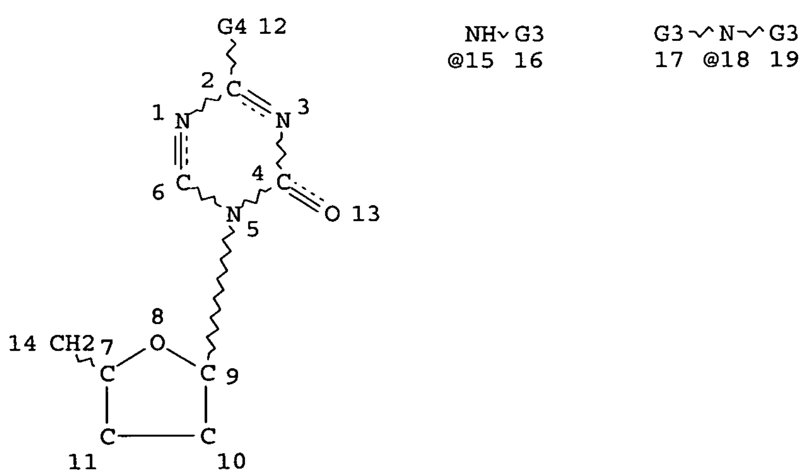

VAR G3=AK/CY
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
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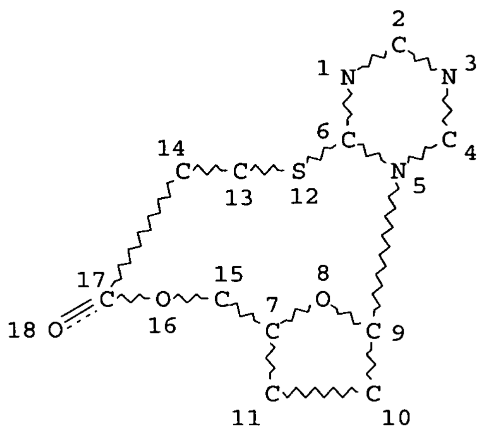

NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
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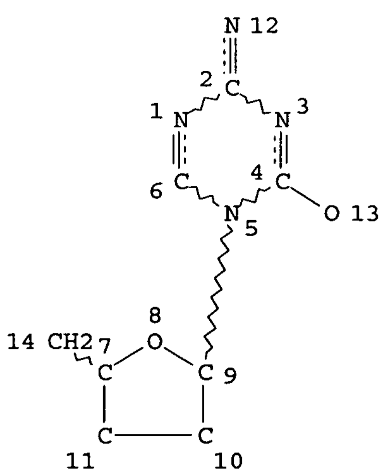

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 4 9
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
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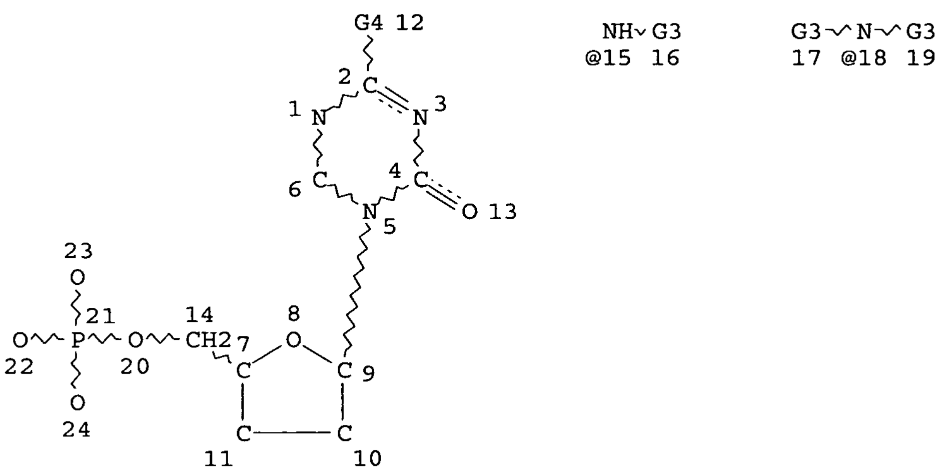
L20 238 SEA FILE=REGISTRY SUB=L2 SSS FUL L9
L21 0 SEA FILE=REGISTRY SSS FUL L12
L22 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 OR L21
L23 STR



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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 7 5
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
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L27 2250 SEA FILE=HCAPLUS ABB=ON PLU=ON L26
L28 1647 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND PD=<SEPTEMBER 30, 2002
L29 61481 SEA FILE=HCAPLUS ABB=ON PLU=ON (VIRUSTATS/CV OR "ANTIVIRAL AGENTS"/CV) OR ANTIVIR? OR VIRUSTAT?
L30 30 SEA FILE=HCAPLUS ABB=ON PLU=ON L27(L)L29
L31 111 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND L29
L32 71 SEA FILE=HCAPLUS ABB=ON PLU=ON L31 AND L28
L33 48 SEA FILE=HCAPLUS ABB=ON PLU=ON L32 NOT L30
L34 10 SEA FILE=HCAPLUS ABB=ON PLU=ON "DAIFUKU RICHARD"/AU
L36 23 SEA FILE=HCAPLUS ABB=ON PLU=ON ("SERGUEEV D S"/AU OR "SERGUEEV DIMITRI"/AU OR "SERGUEEV DIMITRI S"/AU OR "SERGUEEV DMITRI"/AU OR "SERGUEEV DMITRI S"/AU)
L37 30 SEA FILE=HCAPLUS ABB=ON PLU=ON (L34 OR L36) NOT (L22 OR L30

OR L33)

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L37 ANSWER 1 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1151427 HCAPLUS
TITLE: The effect of a single boranophosphate substitution with defined configuration on the thermal stability and conformation of a DNA duplex
AUTHOR(S): Wang, Joy Xin; **Sergueev, Dmitri S.**; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, P.M. Gross Chemical Laboratory, Duke University, Durham, NC, USA
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2005), 24(5-7), 951-955
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Substitution of one non-bridging oxygen in a natural phosphodiester internucleotide linkage with a borano (-BH3) group results in a chiral phosphorus center in boranophosphate. UV thermal melting profiles were recorded for DNA duplexes formed between a DNA 9-mer with either an Sp or a Rp boranophosphate linkage in the middle and the complementary DNA 9-mer, as well as for their unmodified parent duplex. The thermal stability of the DNA duplexes was in the order of normal > Sp borano > Rp borano. CD spectra of all three duplexes exhibited typical B-DNA profile, which closely resembled each other.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 2 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:638621 HCAPLUS
DOCUMENT NUMBER: 143:126763
TITLE: Preparation of mutagenic heterocycle nucleosides as potential antiviral and antitumor chemo-therapeutic agents
INVENTOR(S): **Daifuku, Richard**; Gall, Alexander; **Sergueev, Dmitri**
PATENT ASSIGNEE(S): Koronis Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 60 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005065150	A2	20050721	WO 2004-US41555	20041210

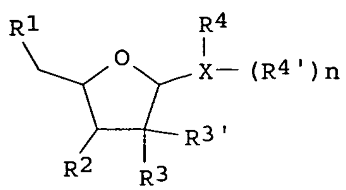
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,

RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-530934P P 20031219

OTHER SOURCE(S): MARPAT 143:126763

GI



I

AB The present invention provides mutagenic heterocycle nucleosides I, wherein R1 and R2 are independently H, OR5; R3 and R3' are independently H, OR10, halogen; R4 is amide, heterocycle; R5 is H, alkyl, acyl, heteroalkyl, aryl, POR6R7; R6 and R7 are independently OR8, NR8R9, OCH2CH2CN, alkyl, nucleoside, amino acid; R8 and R9 are independently H, alkyl, heteroalkyl, aryl, heteroaryl; R10 is H, alkyl, heteroalkyl; n is 0, 1; as well as methods of using the compds. as antiviral and anti-cancer chemo-therapeutic agents (no data).

L37 ANSWER 3 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:512843 HCAPLUS

DOCUMENT NUMBER: 143:259548

TITLE: KP-1212/1461, a nucleoside designed for the treatment of HIV by viral mutagenesis

AUTHOR(S): Harris, Kevin S.; Brabant, William; Styrchak, Sheila; Gall, Alexander; **Daifuku, Richard**

CORPORATE SOURCE: Koronis Pharmaceuticals Inc., Redmond, WA, 98052, USA

SOURCE: Antiviral Research (2005), 67(1), 1-9
CODEN: ARSRDR; ISSN: 0166-3542

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We report the activities of a novel nucleoside analog against HIV. This nucleoside (KP-1212) is not a chain terminator but exerts its antiviral effects via mutagenesis of the viral genome. Serial passaging of HIV in the presence of KP-1212 causes an increase in the mutation rate of the virus leading to viral ablation. HIV strains resistant to KP-1212 have not yet been isolated. Quite to the contrary, virus treated with KP-1212 exhibited an increased sensitivity not only to KP-1212 but also to another nucleoside reverse transcriptase inhibitor (NRTI), zidovudine. HIV strains resistant to other NRTIs (e.g. zidovudine, lamivudine, stavudine, abacavir, etc.) exhibited no cross-resistance towards KP-1212. Multiple assays confirmed that KP-1212 has a favorable (low) genotoxicity profile when compared to some approved antiviral nucleosides. In addition, KP-1212 is not toxic to mitochondria nor does it exhibit any inhibitory effects on mitochondrial DNA synthesis.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 4 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:1156447 HCAPLUS

DOCUMENT NUMBER: 142:86692
TITLE: Prodrugs of heteroaryl compounds for the treatment of viral infection and cancer
INVENTOR(S): **Daifuku, Richard**; Gall, Alexander; **Sergueev, Dmitri**; Sologub, Dina; Harris, Kevin
PATENT ASSIGNEE(S): Koronis Pharmaceuticals, Incorporated, USA
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004112716	A2	20041229	WO 2004-US19520	20040618
WO 2004112716	A3	20050210		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005014752	A1	20050120	US 2004-816161	20040331
AU 2004249245	A1	20041229	AU 2004-249245	20040618
CA 2529500	AA	20041229	CA 2004-2529500	20040618
EP 1635836	A2	20060322	EP 2004-755606	20040618

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR

PRIORITY APPLN. INFO.: US 2003-480037P P 20030620
WO 2004-US19520 W 20040618

OTHER SOURCE(S): MARPAT 142:86692

AB The invention provides hydrophobic prodrugs of bases, nucleosides, and nucleotides, as well as methods of using the prodrugs as antiviral and anticancer chemotherapeutic agents. Preparation of e.g. N4-nonyloxycarbonyl-β-2'-deoxy-5,6-dihydro-5-azacytidine is included.

L37 ANSWER 5 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1030018 HCAPLUS
DOCUMENT NUMBER: 142:291940
TITLE: Viral error catastrophe by mutagenic nucleosides
AUTHOR(S): Anderson, Jon P.; **Daifuku, Richard**; Loeb, Lawrence A.
CORPORATE SOURCE: The Joseph Gottstein Memorial Cancer Research Laboratory, Departments of Pathology and Biochemistry, University of Washington, Seattle, WA, 98195, USA
SOURCE: Annual Review of Microbiology (2004), 58, 183-205
CODEN: ARMIAZ; ISSN: 0066-4227
PUBLISHER: Annual Reviews Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. Riboviruses and retroviruses have the highest rates of mutations of any known organism. Increasing the mutation rate of these viruses could exceed the error threshold for viability of a viral population within a host. Recent expts. with mutagenic nucleoside analogs

validate this new approach to treating infection of RNA viruses. Lethal mutagenesis with HIV-infected cells in culture has been documented and has been postulated to be the mechanism for treatment of hepatitis C with ribavirin. It has been considered that the viral dynamics involved in the formation of a quasispecies, the choice of mutagenic nucleoside analogs, and the studies that have demonstrated the feasibility of lethal mutagenesis.

REFERENCE COUNT: 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

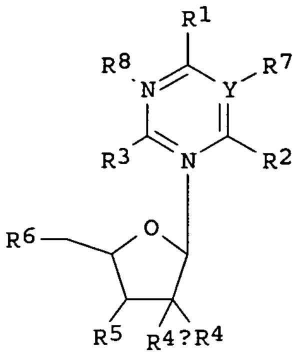
L37 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:290464 HCAPLUS
DOCUMENT NUMBER: 140:297477
TITLE: Treatment of viral diseases by 1,3,5-triazine nucleoside and nucleotide analogs, and preparation thereof
INVENTOR(S): **Daifuku, Richard**; Gall, Alexander; **Sergueev, Dmitri**
PATENT ASSIGNEE(S): Koronis Pharmaceuticals, Incorporated, USA
SOURCE: PCT Int. Appl., 108 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2004028454	A2	20040408	WO 2003-US30200		20030924
WO 2004028454	A3	20041118			
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
CA 2499036	AA	20040408	CA 2003-2499036		20030924
AU 2003278904	A1	20040419	AU 2003-278904		20030924
US 2004127436	A1	20040701	US 2003-670915		20030924
EP 1545558	A2	20050629	EP 2003-770420		20030924
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
JP 2006507255	T2	20060302	JP 2004-539890		20030924
PRIORITY APPLN. INFO.:			US 2002-413337P	P	20020924
			WO 2003-US30200	W	20030924

OTHER SOURCE(S): MARPAT 140:297477

GI



I

AB The invention discloses a genus of nucleoside or nucleotide analogs I [Y=C, CH, N; Z=C,CH,B; R1=H, acyl, NHNH2, etc; R2=absent, H, acyl, etc; R3=H, acyl, (un)substituted alkyl, etc.; R4, R4a=H, halo, OMe, OH; R5, R6=H, OR14 (R14= H, (un)substituted alkyl, etc.;) R7,R8=absent, H, acyl, etc.] for use as antiviral agents. In a first aspect, there is provided a compound according to Formula I as shown. In another aspect, the nucleoside and nucleotide analogs according to Formula I are used to treat a viral disease by administrating a therapeutically effective amount of a compound of Formula I to patient with a viral disease which is caused by an RNA virus, a DNA virus, a retrovirus, or HIV. Preparation of selected analogs is described.

L37 ANSWER 7 OF 30 HCAPLUS

ACCESSION NUMBER: 2004:256208 HCAPLUS
DOCUMENT NUMBER: 140:400753
TITLE: Reading, writing, and modulating genetic information with boranophosphate mimics of nucleotides, DNA, and RNA
AUTHOR(S): Shaw, Barbara Ramsay; Dobrikov, Mikhail; Wang, Xin; Wan, Jing; He, Kaizhang; Lin, Jin-Lai; Li, Ping; Rait, Vladimir; Sergueeva, Zinaida A.; **Sergueev, Dmitri**
CORPORATE SOURCE: Paul M. Gross Chemical Laboratory, Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Annals of the New York Academy of Sciences (2003), 1002(Therapeutic Oligonucleotides), 12-29
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: New York Academy of Sciences
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. The P-boranophosphates are efficient and near perfect mimics of natural nucleic acids in permitting reading and writing of genetic information with high yield and accuracy. Substitution of a borane (-BH3) group for oxygen in the phosphate ester bond creates an isoelectronic and isosteric mimic of natural nucleotide phosphate esters found in mononucleotides, i.e., AMP and ATP, and in RNA and DNA polynucleotides. Compared to natural nucleic acids, the boranophosphate RNA and DNA analogs demonstrate increased lipophilicity and resistance to endo- and exonucleases, yet they retain neg. charge and similar spatial geometry. Borane groups can readily be introduced into the NTP and dNTP nucleic acid monomer precursors to produce α-P-borano nucleoside triphosphate analogs (e.g., NTPαB and dNTPαB). The NTPαB and

dNTPαB are, in fact, good to excellent substrates for RNA and DNA polymerases, resp., and allow ready enzymic synthesis of RNA and DNA with P-boranophosphate linkages. Further, boranophosphate polymer products are good templates for replication, transcription, and gene expression; boronated RNA products are also suitable for reverse transcription to cDNA. Fully substituted boranophosphate DNA can activate the RNase H cleavage of RNA in RNA-DNA hybrids. Moreover, certain dideoxy-NTPαB analogs appear to be better substrates for viral reverse transcriptases than the regular ddNTPs, and may offer promising prodrug alternatives in antiviral therapy. These properties make boranophosphates promising candidates for diagnostics; aptamer selection; gene therapy; and antiviral, antisense, and RNAi therapeutics. The boranophosphates constitute a versatile family of phosphate mimics for processing genetic information and modulating gene function.

REFERENCE COUNT: 89 THERE ARE 89 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:714367 HCAPLUS
DOCUMENT NUMBER: 140:107313
TITLE: RNase H Activation by Stereoregular Boranophosphate Oligonucleotide
AUTHOR(S): Wang, Xin; Dobrikov, Mikhail; **Sergueev, Dmitri** ; Ramsay Shaw, Barbara
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2003), 22(5-8), 1151-1153
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A stereoregular all-(Sp)-boranophosphate oligodeoxyribonucleotide (BH3-ODN) 15-mer was synthesized using an enzymic approach. The BH3--ODN formed a hybrid with the complementary RNA 15-mer and induced RNase H hydrolysis of the RNA strand at ODN concns. as low as 10 nM at 37°C, but with a lower efficiency than that of its natural phosphodiester analog.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:536258 HCAPLUS
DOCUMENT NUMBER: 139:357771
TITLE: Stealth nucleosides: Mode of action and potential use in the treatment of viral diseases
AUTHOR(S): **Daifuku, Richard**
CORPORATE SOURCE: Koronis Pharmaceuticals, Redmond, WA, USA
SOURCE: BioDrugs (2003), 17(3), 169-177
CODEN: BIDRF4; ISSN: 1173-8804
PUBLISHER: Adis International Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. Riboviruses and retroviruses have been shown to spontaneously mutate at an extraordinarily high rate. While this genetic diversity allows viral subpopulations to escape conventional antivirals, it also has a cost. Indeed, this high mutation rate results in the synthesis of many defective virions. Stealth nucleosides are nucleoside analogs that are designed to increase the already high spontaneous mutation rate of viruses to the point where the virus cannot further replicate, a process known as

'lethal mutagenesis'. Rather than causing chain termination and attempting to immediately halt viral replication, as with conventional nucleoside reverse transcriptase inhibitors (NRTI), stealth nucleosides are incorporated into the viral genome during replication and, by mispairing, cause mutations to the viral genome. These mutations affect all viral proteins and cumulatively, over a number of replication cycles, are lethal to the virus. There are two distinct stealth nucleoside platforms: DNA stealth nucleosides and RNA stealth nucleosides. DNA stealth nucleosides are currently being screened for activity against HIV and may have activity against hepatitis B virus and smallpox virus, with the clin. lead DNA stealth nucleoside demonstrating activity in the low nanomolar range. In addition, DNA stealth nucleosides have been shown to be able to effectively treat NRTI-resistant HIV strains in vitro, which is not surprising given that the two principal modes of resistance (low affinity of reverse transcriptase for a modified sugar or pyrophosphorolysis) should not be applicable to DNA stealth nucleosides. RNA stealth nucleosides are being developed for the treatment of ribovirus infections, and particularly hepatitis C virus infection. RNA stealth nucleosides are selected for their broad spectrum of antiviral activity, and current lead RNA stealth nucleosides have potency in the same range as ribavirin.

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:173446 HCAPLUS
DOCUMENT NUMBER: 138:198576
TITLE: Mutagenic nucleoside analogs for the treatment of viral disease
INVENTOR(S): Li, Ling; Gall, Alexander; **Daifuku, Richard**
PATENT ASSIGNEE(S): Koronis Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003018030	A1	20030306	WO 2002-US26765		20020821
W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
CA 2458408	AA	20030306	CA 2002-2458408		20020821
US 2003170872	A1	20030911	US 2002-226799		20020821
EP 1425022	A1	20040609	EP 2002-761472		20020821
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK					
JP 2005505536	T2	20050224	JP 2003-522548		20020821
PRIORITY APPLN. INFO.:			US 2001-314728P	P	20010824
			WO 2002-US26765	W	20020821

OTHER SOURCE(S): MARPAT 138:198576

AB The present invention provides a new strategy for inhibiting viral replication. In the methods of the invention, specified deoxyribonucleoside analogs and ribonucleoside analogs are used to dramatically increase the mutation rate of the virus. This increase in the mutation rate of the virus results in reduced viability of progeny generations of the virus, thereby inhibiting viral replication.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 11 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:774967 HCAPLUS
DOCUMENT NUMBER: 138:118016
TITLE: Reading and writing genetic information with boranophosphate (borane phosphate) mimics of nucleotides, DNA, and RNA
AUTHOR(S): Shaw, Barbara Ramsay; Wan, Jing; Wang, Xin; Dobrikov, Mikhail; He, Kaizhang; Porter, Kenneth; Lin, Jin-Lai; Rait, Vladimir; **Sergueev, Dmitri**; Sergueeva, Zinaida A.
CORPORATE SOURCE: Paul M. Gross Chemical Laboratory, Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Collection Symposium Series (2002), 5(Chemistry of Nucleic Acid Components), 169-180
CODEN: CSYSFN
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. The P-boranophosphates are isoelectronic mimics of natural nucleotide phosphate esters found in mols. like AMP, ATP, RNA, and DNA. A P-boranophosphate contains an isoelectronic rane (-BH3) in place of a non-bridging oxygen atom in the phosphate monoor diester. Relative to natural nucleic acids, the borane-containing DNA and RNA analogs demonstrate increased lipophilicity and resistance to endo- and exonucleases, yet they retain a neg. charge, similar spatial geometry, and ability to serve as templates in replication, transcription and reverse transcription. Fully-substituted boranophosphate DNA can activate the RNase H cleavage of RNA in RNA:DNA hybrids. The α-P-borane (Rp isomer) analogs of nucleoside triphosphosphates (NTP and dNTP) are very good substrates for RNA and DNA polymerases and allow ready synthesis of RNA and DNA with P-boranophosphate linkages. Thus, the boranophosphates are efficient and near perfect mimics of natural nucleic acids in permitting reading and writing of genetic information with high yield and accuracy. These properties make boranophosphates promising candidates for diagnostics, aptamer selection, and antiviral, antisense and RNAi therapeutics.
REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 12 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:505814 HCAPLUS
DOCUMENT NUMBER: 137:258044
TITLE: Evaluating the specificity of antisense oligonucleotide conjugates: A DNA array analysis
AUTHOR(S): Fisher, Anna Astriab; Ye, Dongjiu; **Sergueev, Dimitri S.**; Fisher, Michael H.; Shaw, Barbara Ramsay; Juliano, Rudolph L.
CORPORATE SOURCE: Department of Pharmacology, School of Medicine, University of North Carolina, Chapel Hill, NC, 27599, USA

SOURCE: Journal of Biological Chemistry (2002), 277(25), 22980-22984
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Antisense oligonucleotides are potentially powerful tools for selective control of cellular and viral gene expression. Crucial to successful application of this approach is the specificity of the oligonucleotide for the chosen RNA target. Here we apply DNA array technol. to examine the specificity of antisense oligonucleotide treatments. The mols. used in these studies consisted of phosphorothioate oligomers linked to the Antennapedia (Ant) delivery peptide. The antisense oligonucleotide component was complementary to a site flanking the AUG of the MDR1 message, which codes for P-glycoprotein, a membrane ATPase associated with multidrug resistance in tumor cells. Using a DNA array of 2059 genes, we analyzed cellular responses to mols. comprised of Ant peptide-oligonucleotide conjugates, as well as to the Ant peptide alone. Besides the expected reduction in MDR1 message level, 37 other genes (.apprx.2% of those tested) showed changes of comparable magnitude. The validity of the array results was confirmed for selected genes using Northern blots to assess mRNA levels. These results suggest that studies using antisense oligonucleotide technol. to modulate gene expression need to be interpreted with caution.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:500328 HCAPLUS
DOCUMENT NUMBER: 138:130544
TITLE: Conjugates of Antisense Oligonucleotides with the Tat and Antennapedia Cell-Penetrating Peptides: Effects on Cellular Uptake, Binding to Target Sequences, and Biologic Actions
AUTHOR(S): Astriab-Fisher, Anna; **Sergueev, Dimitri**; Fisher, Michael; Shaw, Barbara Ramsay; Juliano, R. L.
CORPORATE SOURCE: School of Medicine, Department of Pharmacology, University of North Carolina, Chapel Hill, NC, 27599, USA
SOURCE: Pharmaceutical Research (2002), 19(6), 744-754
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The attainment of effective intracellular delivery remains an important issue for pharmacol. applications of antisense oligonucleotides. Here, we describe the synthesis, binding properties, and biol. properties of peptide-oligonucleotide conjugates comprised of the Tat and Ant cell-penetrating peptides with 2'-O-Me phosphorothioate oligonucleotides. The biol. assay used in this study measures the ability of the antisense mol. to correct splicing of an aberrant intron inserted into the Luciferase gene; thus, this assay clearly demonstrates the delivery of functional antisense mols. to the splicing machinery within the nucleus. The binding affinities of the conjugates to their target sequences were measured by surface plasmon resonance (BIAcor) techniques. The peptide-oligonucleotide conjugates progressively entered cells over a period of hours and were detected in cytoplasmic vesicles and in the nucleus. Peptide-oligonucleotide conjugates targeted to the aberrant splice site, but not mismatched controls, caused an increase in Luciferase

activity in a dose-responsive manner. The kinetics of Luciferase appearance were consistent with the course of the uptake process for the conjugates. The effects of peptide conjugation on the hybridization characteristics of the oligonucleotides were also examined using surface plasmon resonance. The peptide-oligonucleotide conjugates displayed binding affinities and selectivities similar to those of unconjugated oligonucleotides. Conjugation with cell-penetrating peptides enhances oligonucleotide delivery to the nucleus without interfering with the base-pairing function of antisense oligonucleotides.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:675076 HCAPLUS
DOCUMENT NUMBER: 136:37851
TITLE: Borane-amine complexes - versatile reagents in the chemistry of nucleic acids and their analogs
AUTHOR(S): Sergueeva, Zinaida A.; **Sergueev, Dmitri S.**; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2001), 20(4-7), 941-945
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:37851

AB A new method for synthesis of N-alkylated nucleosides was developed. Exceptionally mild and selective conversion of N-acyl to the corresponding N-alkyl nucleosides was achieved by reduction with borane-amine complexes. The borane-amine complexes were also used as efficient scavengers of a 4,4'-dimethoxytrityl (DMT) cation. Neutralization of the cation eliminated the borano-phosphate group degradation during acidic DMT deprotection and allowed milder acidic conditions for the deprotection.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:675013 HCAPLUS
DOCUMENT NUMBER: 136:37843
TITLE: Synthesis of oligonucleoside boranophosphates via an H-phosphonate method without nucleobase protection
AUTHOR(S): **Sergueev, Dmitri S.**; Sergueeva, Zinaida A.; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2001), 20(4-7), 789-795
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Short oligonucleoside boranophosphates containing all four nucleosides were synthesized on solid support using base-unprotected nucleoside H-phosphonate monomers. This strategy avoided irreversible base modifications during the boronation procedure. Structures of the boranophosphate oligomers were confirmed by 1H, 31P, 10B NMR and MS anal. as well as by enzymic hydrolysis.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:502877 HCAPLUS
DOCUMENT NUMBER: 133:238229
TITLE: Individual isomers of dinucleoside boranophosphates as synthons for incorporation into oligonucleotides: synthesis and configurational assignment
AUTHOR(S): Sergueeva, Zinaida A.; **Sergueev, Dmitri S.**; Ribeiro, Anthony A.; Summers, Jack S.; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708, USA
SOURCE: Helvetica Chimica Acta (2000), 83(7), 1377-1391
CODEN: HCACAV; ISSN: 0018-019X
PUBLISHER: Verlag Helvetica Chimica Acta
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 133:238229

AB Individual isomers of the protected boranophosphates, i.e., the N6-benzyl-2'-deoxy-5'-O-(4,4'-dimethoxytrityl)adenosin-3'-yl 2'-deoxy-4-O-(4-nitrophenyl)uridin-5'-yl boranophosphates, were synthesized via stereospecific silylation and boronation of their H-phosphonate precursors. 2D-NMR spectroscopic studies yielded an initial assignment of the isomer configurations, which was further confirmed unambiguously by a parallel chemical synthesis. Deprotection of the "dimers" yielded the individual [P(R)]- and [P(S)]-isomers, i.e., the 2'-deoxyadenosin-3'-yl 2'-deoxycytidin-5'-yl boranophosphates. Their substrate properties toward phosphodiesterase I were identical to those of the previously characterized isomers of dithymidine boranophosphate. The protected "dimers" can be used as synthons to incorporate the boranophosphate linkage with a defined configuration to selected positions of an oligonucleotide chain.

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:304151 HCAPLUS
DOCUMENT NUMBER: 133:187724
TITLE: Antisense inhibition of P-glycoprotein expression using peptide-oligonucleotide conjugates
AUTHOR(S): Astriab-Fisher, A.; **Sergueev, D. S.**; Fisher, M.; Ramsay Shaw, B.; Juliano, R. L.
CORPORATE SOURCE: School of Medicine, Department of Pharmacology, University of North Carolina, Chapel Hill, NC, USA
SOURCE: Biochemical Pharmacology (2000), 60(1), 83-90
CODEN: BCPCA6; ISSN: 0006-2952
PUBLISHER: Elsevier Science Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Antisense oligonucleotides are potentially a powerful tool for the therapeutic manipulation of genes associated with cancer. However, pharmacol. applications of oligonucleotides have been hindered by the inability to effectively deliver these compds. to their sites of action within cells. In this study, we have prepared peptide-oligonucleotide conjugates with the intent of improving intracellular delivery. The phosphorothioate oligonucleotide component of the conjugates was complementary to a site flanking the AUG of the message for P-glycoprotein, a membrane ATPase associated with multidrug resistance in tumor cells. Two types of peptide-antisense oligonucleotide conjugates,

but not mismatched control conjugates, provided substantial inhibition of cell surface expression of P-glycoprotein. Surprisingly, the peptide-oligonucleotide conjugates were more potent in the presence of serum than when used under serum-free conditions; this is in striking contrast to most other approaches for intracellular delivery of nucleic acids. Effective inhibition of P-glycoprotein expression was attained with submicromolar concns. of antisense conjugates under serum-replete conditions. The combination of relatively modest mol. size and good efficacy in the presence of serum proteins suggests that peptide-antisense oligonucleotide conjugates may have significant promise for in vivo therapeutic applications.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:182380 HCAPLUS
DOCUMENT NUMBER: 132:347837
TITLE: Rapid and selective reduction of amide group by borane-amine complexes in acyl protected nucleosides
AUTHOR(S): Sergueeva, Zinaida A.; **Sergueev, Dmitri S.**; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708, USA
SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2000), 19(1 & 2), 275-282
CODEN: NNNAFY; ISSN: 1525-7770
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 132:347837

AB Borane-amine complexes provide an unusually fast and selective reduction of a deoxynucleoside N-acyl group to a corresponding N-alkyl group. Three different nucleosides (dG, dA, and dC) each having one of three N-protecting groups (benzoyl, isobutyryl, or acetyl) were used to prepare N-alkylated nucleosides in good yields under mild conditions. Deoxyribose O-acyl protecting groups remain intact at the conditions of N-acyl group reduction

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:70025 HCAPLUS
DOCUMENT NUMBER: 132:352572
TITLE: In vitro transport and delivery of antisense oligonucleotides
AUTHOR(S): Hughes, J.; Astriab, Anna; Yoo, Hoon; Alahari, Suresh; Liang, Earvin; **Sergueev, Dmitri**; Shaw, Barbara Ramsey; Juliano, R. L.
CORPORATE SOURCE: Department of Pharmaceutics, University of Florida, Gainesville, FL, 32610, USA
SOURCE: Methods in Enzymology (2000), 313(Antisense Technology, Part A), 342-358
CODEN: MENZAU; ISSN: 0076-6879
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 51 refs. of liposomal delivery systems for oligonucleotides. Also studied were cationic amphiphiles, pH-sensitive surfactants, dendrimers as delivery systems, and of transport-enhancing peptides. (c) 2000 Academic Press.

REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 20 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:70019 HCAPLUS
DOCUMENT NUMBER: 132:265350
TITLE: Boranophosphate backbone: a mimic of phosphodiesters, phosphorothioates, and methylphosphonates
AUTHOR(S): Shaw, Barbara Ramsay; **Sergueev, Dmitri**; He, Kaizhang; Porter, Ken; Summers, Jack; Sergueeva, Zinaida; Rait, Vladimir
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Methods in Enzymology (2000), 313(Antisense Technology, Part A), 226-257
CODEN: MENZAU; ISSN: 0076-6879
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 70 refs. Nucleoside boranophosphates are distinctive in that one of the non-bridging oxygens in the phosphate diester is replaced by a borane moiety (BH3). Although they retain the same net charge, BH3--ODN have unique chemical and biochem. characteristics relative to other analogs. The change in polarity, lipophilicity, nuclease resistance, and the activation of RNase H cleavage of RNA in RNA:boranophosphate hybrids make boranophosphates very attractive for applications in enzymol. and mol. biol. and as potential antisense agents. (c) 2000 Academic Press.
REFERENCE COUNT: 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:514922 HCAPLUS
DOCUMENT NUMBER: 131:268361
TITLE: Boranophosphate nucleic acids - a versatile DNA backbone
AUTHOR(S): Rait, Vladimir; **Sergueev, Dmitri**; Summers, Jack; He, Kaizhang; Huang, Faqing; Krzyzanowska, Bozenna; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Nucleosides & Nucleotides (1999), 18(6 & 7), 1379-1380
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review, with .apprx.9 refs. Important chemical and biochem. properties of boranophosphate DNA and RNA oligonucleotides are reviewed. Stereoregular boranophosphate oligomers can be synthesized enzymically and form stable duplexes with DNA. Fully boronated, non-stereoregular oligothymidylates, synthesized chemical, form hybrids with poly(A) that have lower m.ps. than oligothymidylate:poly(A), yet they nevertheless can support the RNase H mediated cleavage of RNA.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 22 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:380225 HCAPLUS
DOCUMENT NUMBER: 131:88118
TITLE: Synthesis of diuridine 3',5'-boranophosphate: H-phosphonate approach

AUTHOR(S): He, Kaizhang; **Sergueev, Dmitri S.**; Sergueeva, Zinaida A.; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, P. M. Gross Chemical Laboratory, Duke University, Durham, NC, 27708, USA
SOURCE: Tetrahedron Letters (1999), 40(25), 4601-4604
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Diuridine 3',5'-boranophosphate, the RNA analog of boranophosphate nucleic acids, was synthesized by a new approach via the H-phosphonate. Two diastereomers of diuridine 3',5'-boranophosphate were separated by reverse phase HPLC.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:180702 HCAPLUS
DOCUMENT NUMBER: 130:267687
TITLE: Synthesis of dithymidine boranophosphates via stereospecific boronation of H-phosphonate diesters and assignment of their configuration
AUTHOR(S): Sergueeva, Zinaida A.; **Sergueev, Dmitri S.**; Shaw, Barbara Ramsay
CORPORATE SOURCE: Department of Chemistry, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Tetrahedron Letters (1999), 40(11), 2041-2044
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The absolute configurations of the two dithymidine boranophosphate isomers were established by chemical correlation with the H-phosphonate isomers. All chemical transformations leading from H-phosphonate diesters to boranophosphate diesters were found to be stereospecific with retention of configuration around phosphorus. The data verify our previous assignment of Rp and Sp isomers of dithymidine boranophosphate made on the basis of NMR and enzymic hydrolysis.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:173177 HCAPLUS
DOCUMENT NUMBER: 130:261850
TITLE: Safety and biological efficacy of an adeno-associated virus vector-cystic fibrosis transmembrane regulator (AAV-CFTR) in the cystic fibrosis maxillary sinus
AUTHOR(S): Wagner, John A.; Messner, Anna H.; Moran, Mary Lynn; **Daifuku, Richard**; Kouyama, Keisuke; Desch, Julie K.; Manley, Sara; Norbash, Alexander M.; Conrad, Carol K.; Friborg, Sandra; Reynolds, Thomas; Guggino, William B.; Moss, Richard B.; Carter, Barrie J.; Wine, Jeffrey J.; Flotte, Terence R.; Gardner, Phyllis
CORPORATE SOURCE: the Departments of Molecular Pharmacology, Stanford University School of Medicine, Stanford, CA, USA
SOURCE: Laryngoscope (1999), 109(2, Pt. 1), 266-274
CODEN: LARYA8; ISSN: 0023-852X
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Objective: The host immune response and low vector efficiency have been key impediments to effect cystic fibrosis transmembrane regulator (CFTR) gene transfer for cystic fibrosis (CF). An adeno-associated virus vector (AAV-CFTR) was used in a phase I dose-escalation study to transfer CFTR cDNA into respiratory epithelial cells of the maxillary sinus of 10 CF patients. Study Design: A prospective, randomized, unblinded, dose-escalation, within-subjects, phase I clin. trial of AAV-CFTR was conducted. Patients: Ten patients with previous bilateral maxillary antrostomies were treated. Main Outcome Measures: Safety, gene transfer as measured by semiquant. polymerase chain reaction (PCR), and sinus transepithelial p.d. (TEPD) were measured. Results: The highest level of gene transfer was observed in the range of 0.1-1 AAV-CFTR vector copy per cell in biopsy specimens obtained 2 wk after treatment. When tested, persistence was observed in one patient for 41 days and in another for 10 wk. Dose-dependent changes in TEPD responses to pharmacol. intervention were observed following treatments. Little or no inflammatory or immune responses were observed Conclusion: AAV-CFTR administration to the maxillary sinus results in successful, dose-dependent gene transfer to the maxillary sinus and alterations in sinus TEPD suggestive of a functional effect, with little or no cytopathic or host immune response. Further study is warranted for AAV vectors as they may prove useful for CFTR gene transfer and other in vivo gene transfer therapies. A prospective, randomized, double-blind, placebo-controlled, within-subjects, phase II clin. trial of the effect AAV-CFTR on clin. recurrence of sinusitis will determine the clin. efficacy of AAV gene therapy for CF.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 25 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:45207 HCAPLUS
DOCUMENT NUMBER: 130:110560
TITLE: Synthesis and use of nuclease-resistant oligonucleotides with boranophosphonate linkages
INVENTOR(S): Shaw, Barbara Ramsay; Porter, Kenneth W.; **Sergueev, Dmitri**
PATENT ASSIGNEE(S): Duke University, USA
SOURCE: U.S., 34 pp., Cont.-in-part of U.S. 5,683,689. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5859231	A	19990112	US 1996-716718	19960916
US 5683869	A	19971104	US 1994-300265	19940902
WO 9811120	A1	19980319	WO 1997-US13696	19970912
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9743267	A1	19980402	AU 1997-43267	19970912
US 6376178	B1	20020423	US 1999-438836	19991112
US 2003064483	A1	20030403	US 2001-984566	20011030
US 6808897	B2	20041026		

PRIORITY APPLN. INFO.:

US 1993-115690	B2	19930903
US 1994-300265	A2	19940902
US 1996-716718	A	19960916
WO 1997-US13696	W	19970912
US 1998-98422	B1	19980616
US 1999-438836	A1	19991112

AB The present invention relates to a process of synthesizing nucleic acids containing boranophosphonate linkages that are resistant to degradation The method comprises (1) synthesizing an oligonucleotide containing internucleoside H-phosphonate diester linkages; (2) converting said H-phosphonate diester linkages to phosphite triester linkages, e.g., by halogenation or silylation with bis(trimethylsilyl)acetamide; (3) boronating the phosphite triester linkage with a boron complex such as pyridine borane; and (4) converting the boranophosphate diester linkages to boranophosphate linkages using ammonia. The boronate-linked oligonucleotides were shown to be resistant to exonuclease III digestion. This exonuclease resistance was the basis for the demonstrated one-step PCR sequencing of M13mp2 phage DNA. The boronate-linked oligonucleotides were also more resistant to EcoRI, EcoRV and HindIII digestion than were the corresponding phosphorothioate-linked oligonucleotides. Addnl., boronate-linked oligonucleotides were shown to be efficiently transcribed in an in vitro system.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:577197 HCAPLUS
DOCUMENT NUMBER: 129:290353
TITLE: H-Phosphonate Approach for Solid-Phase Synthesis of Oligodeoxyribonucleoside Boranophosphates and Their Characterization
AUTHOR(S): **Sergueev, Dmitri S.**; Shaw, Barbara Ramsay
CORPORATE SOURCE: Paul M. Gross Chemical Laboratory, Duke University, Durham, NC, 27708, USA
SOURCE: Journal of the American Chemical Society (1998), 120(37), 9417-9427
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Substitution of a borano (BH3-) group for non-bridging oxygen in the phosphate backbone of DNA results in a new class of isoelectronic and isoionic DNA analogs. An effective chemical method of synthesis of oligo-deoxynucleoside boranophosphates (BH3--ODNs) on a solid phase has been developed via an H-phosphonate chain elongation approach followed by boronation. The boronation procedure involves the intermediate conversion of an H-phosphonate to a phosphite triester group by silylation and subsequent oxidation by a borane-amine complex. The efficiency of the boronation procedure to form BH3--ODNs is close to that of iodine oxidation to form phosphodiester ODNs. Oligo-thymidine boranophosphates of different lengths up to 12-mer have been readily synthesized, purified by HPLC and/or PAGE methods, and characterized by NMR spectroscopy and MS spectrometry. In physiol. relevant buffers the dodecathymidine boranophosphate hybridized with complementary dodecadeoxyadenylate and exhibited a cooperative melting transition (Tm = 14 °C). Studies of substrate properties showed that BH3--ODNs are readily 5'-phosphorylated by T4 polynucleotide kinase. Boranophosphate analogs are much more resistant toward nuclease hydrolysis than phosphodiester ODNs, and more resistant to P1 and S1 nucleases and snake venom phosphodiesterase than phosphorothioate ODNs.

REFERENCE COUNT: 92 THERE ARE 92 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:258444 HCAPLUS
DOCUMENT NUMBER: 129:392

TITLE: A phase I/II study of tgAAV-CF for the treatment of chronic sinusitis in patients with cystic fibrosis
AUTHOR(S): Wagner, John A.; Moran, Mary Lynn; Messner, Anna H.; **Daifuku, Richard**; Conrad, Carol K.; Reynolds, Thomas; Guggino, William B.; Moss, Richard B.; Carter, Barrie J.; Wine, Jeffrey J.; Flotte, Terence R.; Gardner, Phyllis
CORPORATE SOURCE: Department of Molecular Pharmacology, Stanford University School of Medicine, Stanford, CA, 94305-5332, USA
SOURCE: Human Gene Therapy (1998), 9(6), 889-909
CODEN: HGTHE3; ISSN: 1043-0342
PUBLISHER: Mary Ann Liebert, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The clin. protocol is described for a study designed to determine the safety, effect and dose required for transfection in the maxillary sinus epithelium of tgAAVCF, a recombinant adeno-associated virus with the cystic fibrosis transmembrane regulator gene. Background on cystic fibrosis, gene therapy approaches in this disease and adeno-associated viruses is also given.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:180892 HCAPLUS
DOCUMENT NUMBER: 128:244290
TITLE: Method of synthesizing boranophosphate-linked oligonucleotides
INVENTOR(S): Shaw, Barbara Ramsay; Porter, Kenneth W.; **Sergueev, Dmitri S.**
PATENT ASSIGNEE(S): Duke University, USA
SOURCE: PCT Int. Appl., 107 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9811120	A1	19980319	WO 1997-US13696		19970912
W: AU, CA, JP					
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 5859231	A	19990112	US 1996-716718		19960916
AU 9743267	A1	19980402	AU 1997-43267		19970912
PRIORITY APPLN. INFO.:			US 1996-716718	A	19960916
			US 1993-115690	B2	19930903
			US 1994-300265	A2	19940902
			WO 1997-US13696	W	19970912

AB The title method comprises (1) synthesizing an oligonucleotide containing internucleoside H-phosphonate diester linkages; (2) converting said H-phosphonate diester linkages to phosphite triester linkages (e.g, by halogenation or silylation with bis(trimethylsilyl)acetamide); (3) boronating the phosphite triester linkage with a boron complex such as pyridine borane; and (4) converting the boranophosphate diester linkages to boranophosphate linkages using ammonia. The boronate-linked oligonucleotides were shown to be resistant to exonuclease III digestion. This exonuclease resistance was the basis for the demonstrated one-step PCR sequencing of M13mp2 phage DNA. The boronate-linked oligonucleotides

were also more resistant to EcoRI, EcoRV and HindIII digestion than were the corresponding phosphorothioate-linked oligonucleotides. Addnl., boronate-linked oligonucleotides were shown to be efficiently transcribed in an in vitro system.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 29 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:758011 HCAPLUS
DOCUMENT NUMBER: 128:61751
TITLE: Boranophosphate oligonucleotides: new synthetic approaches
AUTHOR(S): **Sergueev, Dmitri**; Hasan, Ahmad; Ramaswamy, Muthukumar; Shaw, Barbara Ramsay
CORPORATE SOURCE: Paul M. Gross Chemical Laboratory, Duke University, Durham, NC, 27708-0346, USA
SOURCE: Nucleosides & Nucleotides (1997), 16(7-9), 1533-1538
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Recently our laboratory reported a new backbone-modified class of oligonucleotides, with a borane (BH3-) group replacing one of the non-bridging oxygen atoms. Here we present two new approaches to synthesize the boranophosphate oligodeoxyribonucleotides. All-stereoregular boranophosphate oligonucleotides can be prepared by enzymic template extension reactions using nucleoside α-boranotriphosphates, which are good substrates for a number of polymerases. Larger scale synthesis of boranophosphate oligonucleotides can be carried out by effective chemical synthesis using the H-phosphonate approach, instead of previously used phosphoramidite methodol. The main advantage of H-phosphonate methodol. is the ability to carry out one boration reaction, after oligodeoxyribonucleotide chain elongation has been completed, using mild conditions without base damage and producing the desired boranophosphate oligodeoxyribonucleotides in high yield.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 30 OF 30 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:145216 HCAPLUS
DOCUMENT NUMBER: 116:145216
TITLE: Tn1725 transposon mutagenesis of 9-18Δ7, an EcoRI deletion derivative of Salmonella dublin Lane plasmid pSDL2
AUTHOR(S): **Daifuku, Richard**; Chikami, Gary K.
CORPORATE SOURCE: Cent. Health Sci., Univ. California, Los Angeles, CA, 90024-1688, USA
SOURCE: Infection and Immunity (1991), 59(12), 4720-3
CODEN: INFIBR; ISSN: 0019-9567
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A 37.5-kb derivative of the S. dublin virulence plasmid pSDL2 was subjected to mutagenesis with the transposon Tn1725. Fifty-two insertions were mapped, and the mutants were tested for their ability to restore virulence to a plasmid-free strain of S. dublin. Twenty-nine of these inserts could not restore full virulence and thus define nine regions of the plasmid essential for virulence. Deletion of a 4.5-kb region by Bal31 nuclease resulted in a 33-kb derivative that maintained full virulence.

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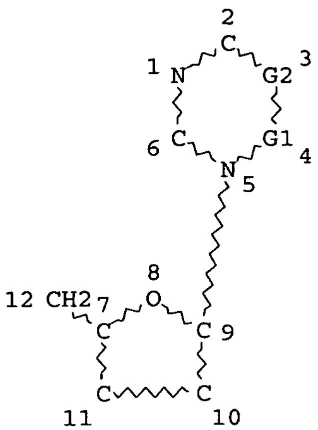

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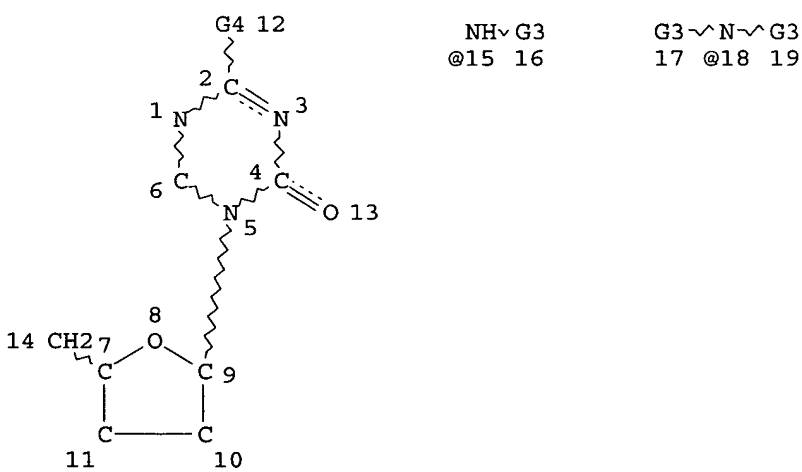

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GRAPH ATTRIBUTES:
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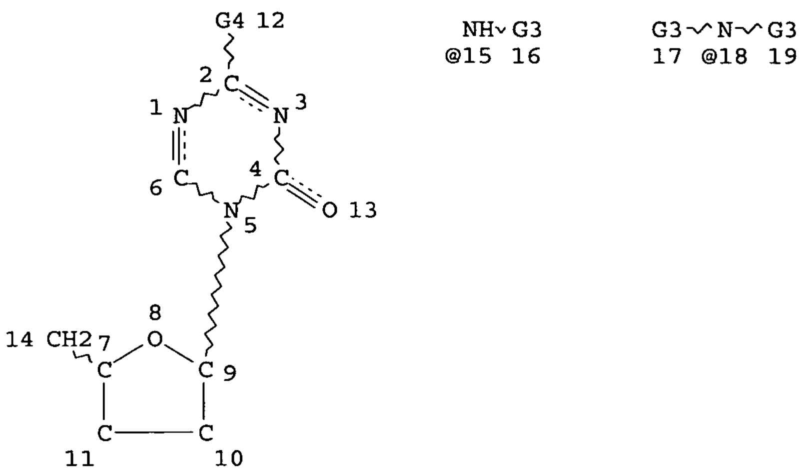
NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE
L11 STR



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STEREO ATTRIBUTES: NONE
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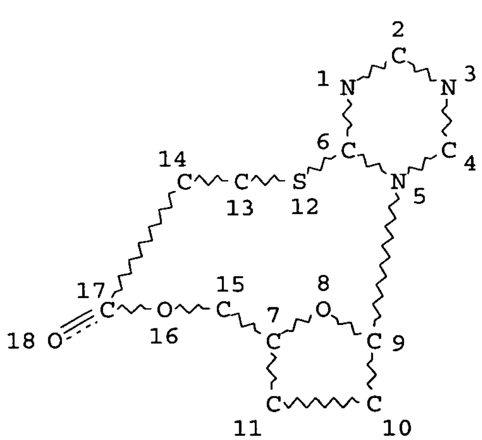

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DEFAULT ECLEVEL IS LIMITED

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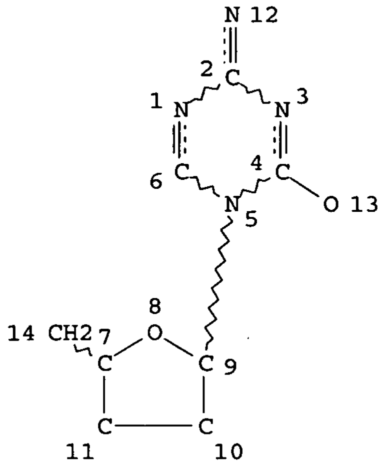
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L15 STR



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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

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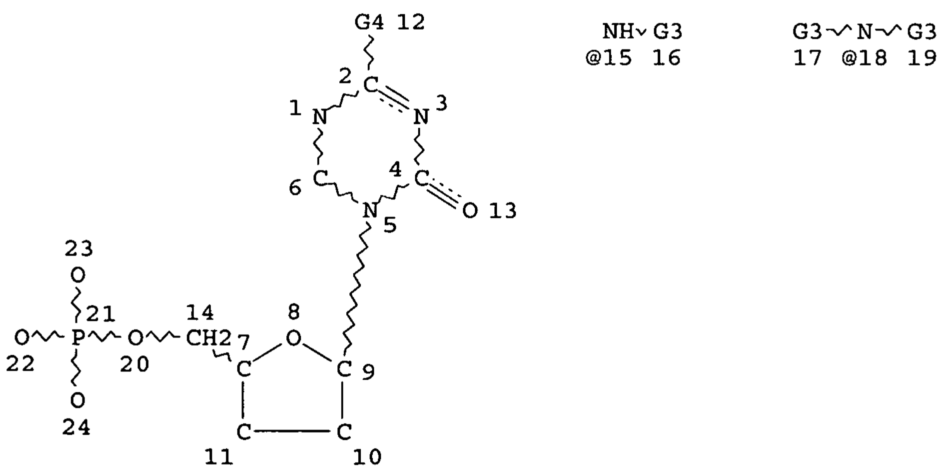

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VAR G4=NH2/15/18
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:
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STEREO ATTRIBUTES: NONE
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L28          1647 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 AND PD=<SEPTEMBER 30,
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L29         61481 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (VIRUSTATS/CV OR "ANTIVIRAL
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L32            71 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L31 AND L28
L33            48 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 NOT L30
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L43 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:37223 HCAPLUS
DOCUMENT NUMBER: 144:122719
TITLE: Modified oligonucleotides for detection of DNA mismatch
INVENTOR(S): Dempcy, Robert O.; **Gall, Alexander A.**; Lokhov, Sergey G.; Afonina, Irina A.; Singer, Michael J.; Kutyavin, Igor V.; Vermeulen, Nicolaas M.J.
PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 75 pp., Cont.-in-part of US 6,949,367.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

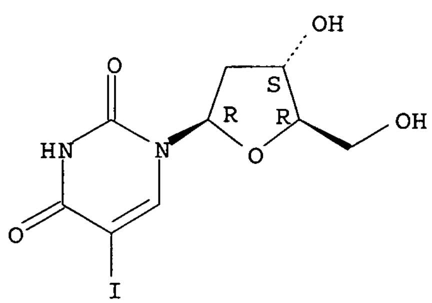
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006009628	A1	20060112	US 2001-796988	20010228
US 7045610	B2	20060516		
US 6127121	A	20001003	US 1998-54830	19980403
US 6312894	B1	20011106	US 1998-54832	19980403
US 2002146690	A1	20021010	US 1999-431385	19991101
US 6485906	B2	20021126		
US 6492346	B1	20021210	US 2000-640953	20000816
US 6949367	B1	20050927	US 2000-724959	20001128

US 2003224359	A1	20031204	US 2001-32307		20011221
US 6683173	B2	20040127			
US 2003235822	A1	20031225	US 2002-176972		20020618
US 2003143602	A1	20030731	US 2002-302608		20021122
US 2005075491	A1	20050407	US 2003-672429		20030926
US 2006003349	A1	20060105	US 2005-109923		20050419
PRIORITY APPLN. INFO.:			US 1998-54830	A1	19980403
			US 1998-54832	A1	19980403
			US 1999-431385	A2	19991101
			US 2000-186046P	P	20000301
			US 2000-640953	A2	20000816
			US 2000-724959	A2	20001128
			US 1995-415370	A2	19950403
			US 2001-796988	A1	20010228
			US 2001-32307	A1	20011221

AB Modified oligonucleotides are provided containing bases selected from unsubstituted and 3-substituted pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines, and optionally have attached minor groove binders and reporter groups.

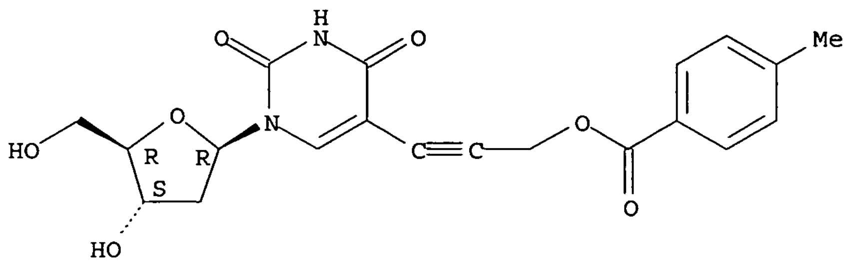
IT **54-42-2**, 5-Iodo-2'-deoxyuridine
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(modified oligonucleotides for detection of DNA mismatch)
RN 54-42-2 HCAPLUS
CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **358979-22-3P 358979-23-4P 358979-24-5P**
358979-54-1P 358979-55-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(modified oligonucleotides for detection of DNA mismatch)
RN 358979-22-3 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

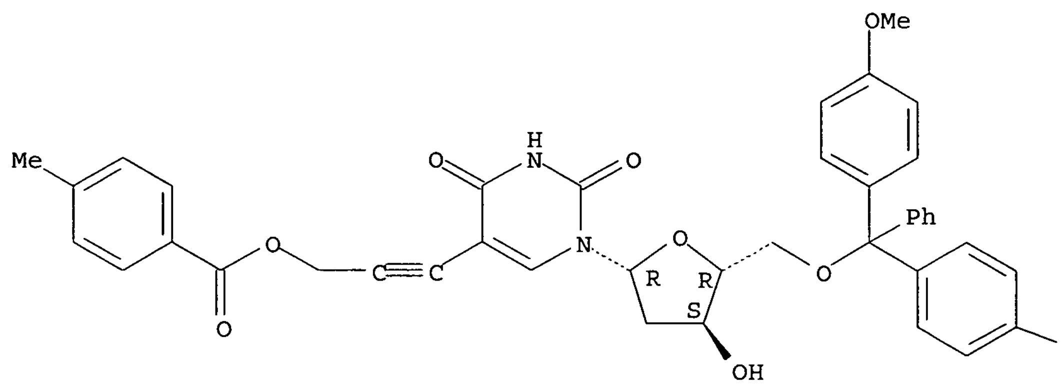
Absolute stereochemistry.



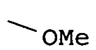
RN 358979-23-4 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



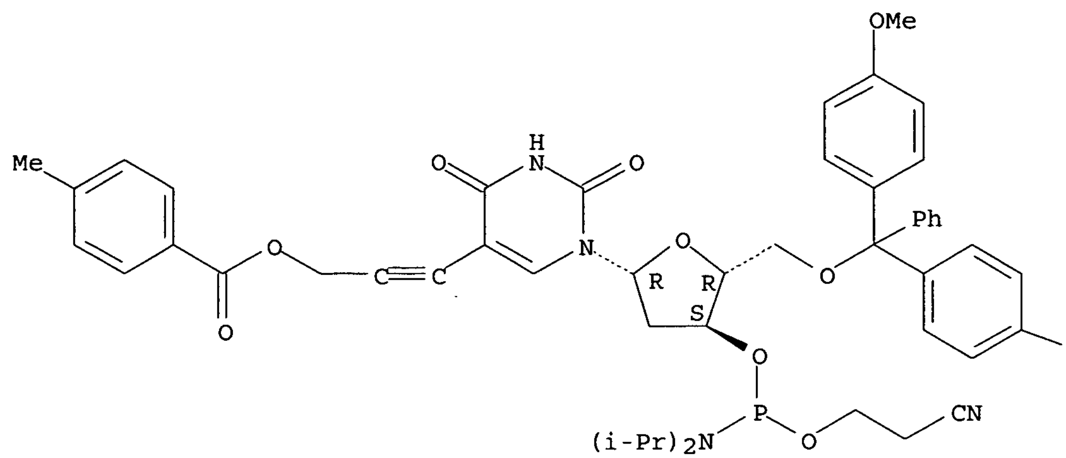
PAGE 1-B



RN 358979-24-5 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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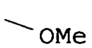
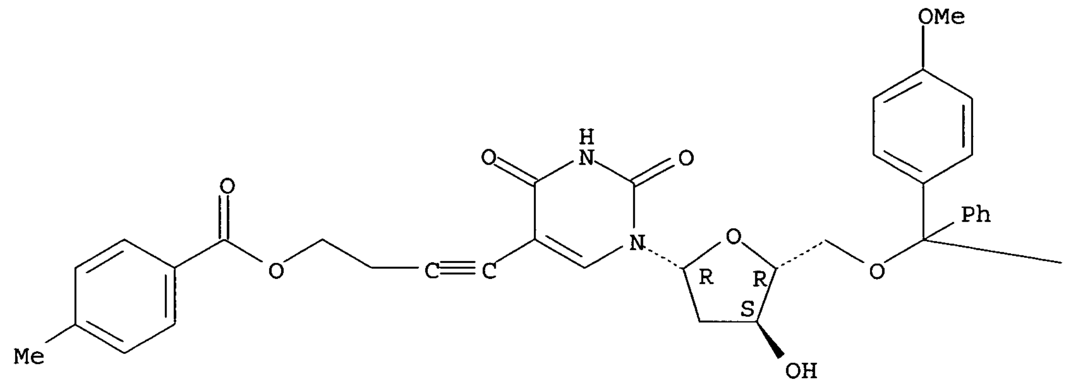


RN 358979-54-1 HCAPLUS

CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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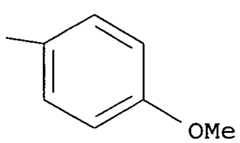
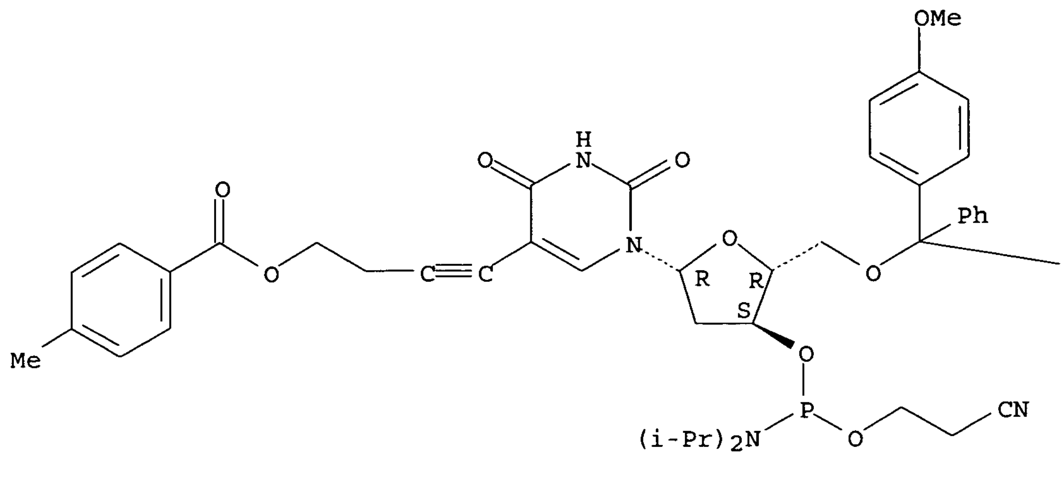


RN 358979-55-2 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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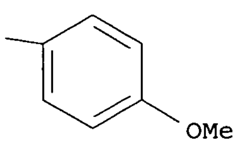


REFERENCE COUNT: 105 THERE ARE 105 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 2 OF 14 HCAPLUS

ACCESSION NUMBER: 2003:1007709 HCAPLUS

DOCUMENT NUMBER: 140:54457

TITLE: Predicting melting temperatures of oligonucleotides containing pyrazolo[3,4-d]pyrimidine or pyrimidine analogs

INVENTOR(S): Lokhov, Sergey G.; Kutyavin, Igor V.; Dempcy, Robert O.; **Gall, Alexander A.**; Afonina, Irina A.; Singer, Michael J.; Vermeulen, Nicolaas M. J.

PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 58 pp., Cont.-in-part of U.S. Ser. No. 796,988.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2003235822	A1	20031225	US 2002-176972		20020618
US 6127121	A	20001003	US 1998-54830		19980403
US 6312894	B1	20011106	US 1998-54832		19980403
US 2002146690	A1	20021010	US 1999-431385		19991101
US 6485906	B2	20021126			
US 6492346	B1	20021210	US 2000-640953		20000816
US 6949367	B1	20050927	US 2000-724959		20001128
US 2006009628	A1	20060112	US 2001-796988		20010228
US 7045610	B2	20060516			
US 2003143602	A1	20030731	US 2002-302608		20021122
JP 2005532618	T2	20051027	JP 2004-513894		20030618
PRIORITY APPLN. INFO.:			US 1998-54830	A1	19980403
			US 1998-54832	A1	19980403
			US 1999-431385	A1	19991101
			US 2000-640953	A2	20000816
			US 2000-724959	A2	20001128
			US 2001-796988	A2	20010228
			US 1995-415370	A2	19950403
			US 2000-186046P	P	20000301
			US 2002-176972	A	20020618
			WO 2003-US19447	W	20030618

OTHER SOURCE(S): MARPAT 140:54457

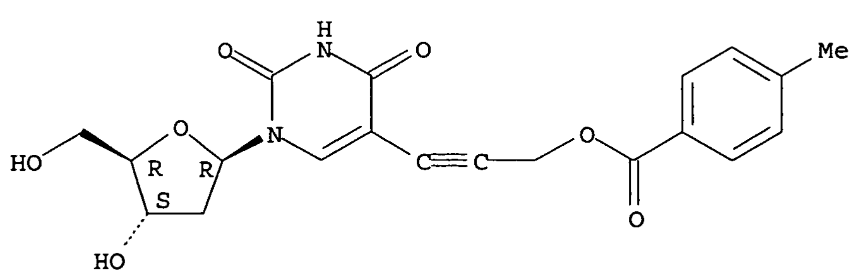
AB Software systems and methods for predicting the melting temperature (Tm) and other characteristics of oligonucleotides, including modified oligonucleotides. Modified oligonucleotides are provided containing bases selected from unsubstituted and 3-substituted pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines, and optionally have attached minor groove binders and reporter groups.

IT **358979-22-3P 358979-23-4P 358979-24-5P**
358979-54-1P 358979-55-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of; predicting melting temps. of oligonucleotides containing pyrazolo[3,4-d]pyrimidine or pyrimidine analogs)

RN 358979-22-3 HCAPLUS

CN Uridine, 2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

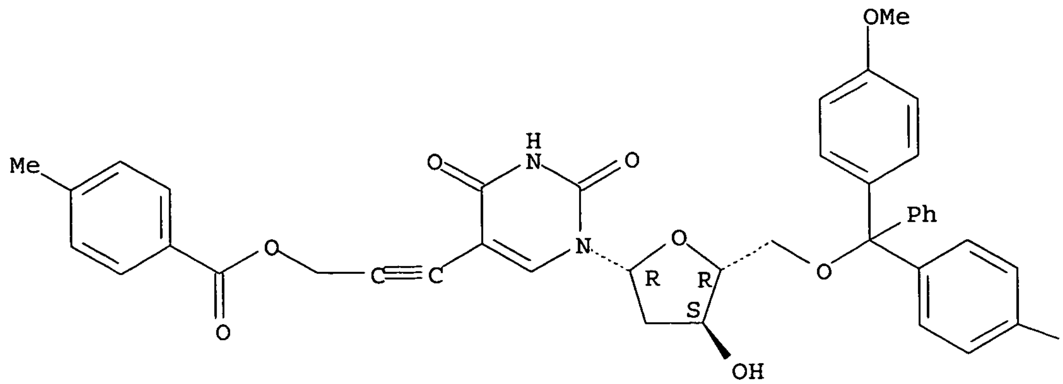


RN 358979-23-4 HCAPLUS

CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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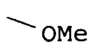
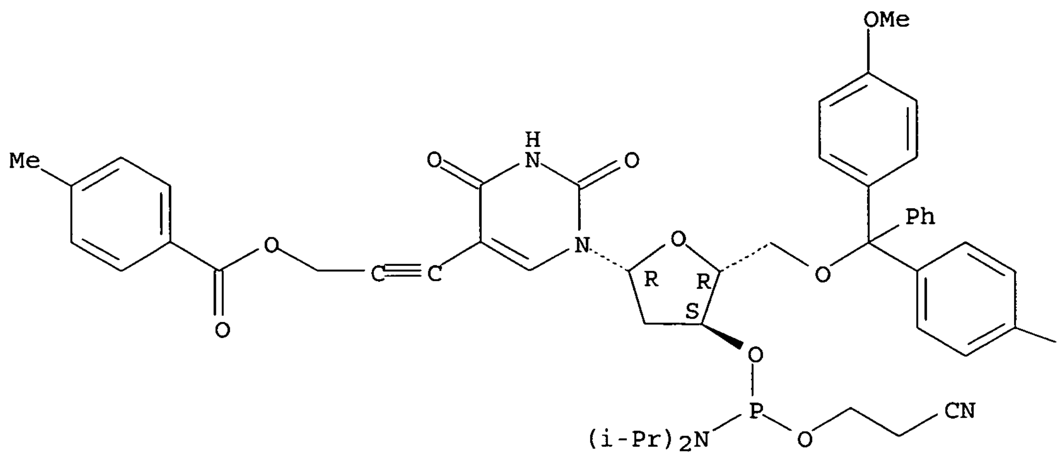


RN 358979-24-5 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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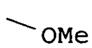
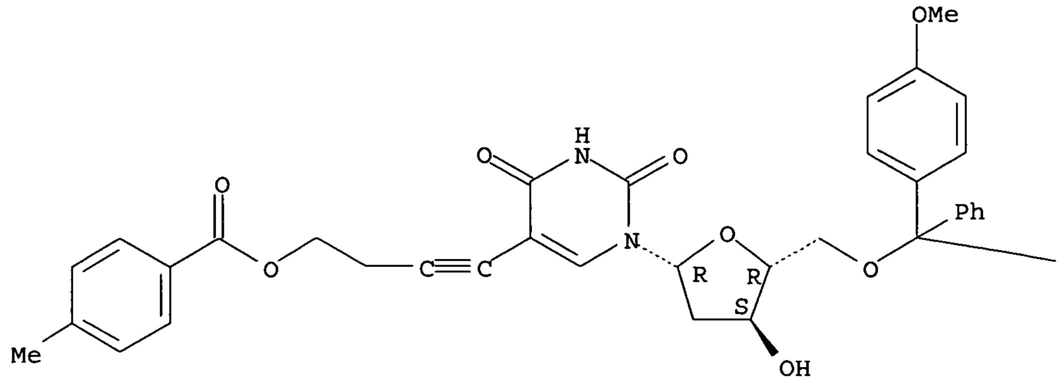


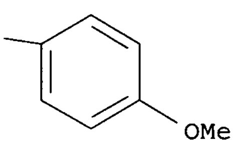
RN 358979-54-1 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



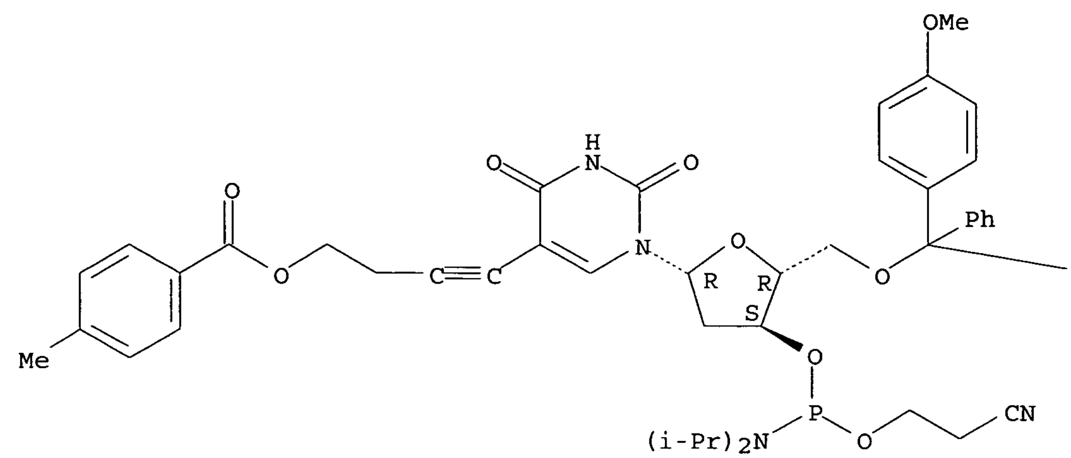
PAGE 1-B



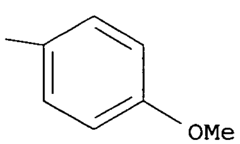
RN 358979-55-2 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

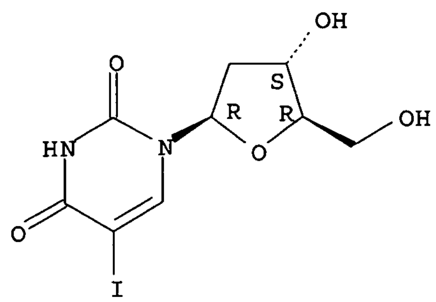


PAGE 1-B



IT 54-42-2, 5-Iodo-2'-deoxyuridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of; predicting melting temps. of oligonucleotides containing pyrazolo[3,4-d]pyrimidine or pyrimidine analogs)
RN 54-42-2 HCAPLUS
CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L43 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:813416 HCAPLUS
DOCUMENT NUMBER: 135:353707
TITLE: Bifunctional crosslinking oligonucleotides adapted for linking to a target sequence of duplex DNA
INVENTOR(S): Meyer, Rich B., Jr.; Gamper, Howard B.; Kutyavin, Igor V.; **Gall, Alexander A.**
PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: U.S., 15 pp., Cont.-in-part of U.S. Ser. No. 11,482, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6312953	B1	20011106	US 1994-266949		19940627
PRIORITY APPLN. INFO.:			US 1993-11482	B2	19930126

AB Chemical modified oligonucleotides (ODNS) are complementary, either in the sense of the classic "four letter code" recognition motif, or in the sense required for triple strand formation based on the more limited "two letter code recognition motif", to a target sequence of double stranded DNA of an invading cell, organism or pathogen, such as a virus, fungus, parasite, bacterium, malignant cell, or any duplex DNA which is desired to be broken into segments for the purpose of "mapping". The ODNs have crosslinking agents covalently attached at least to two different sites of the ODN. Alternatively, the crosslinking agent which is attached to one site on the ODN has two crosslinking functionalities, and therefore in effect comprises two crosslinking agents. The crosslinking agent typically includes a linker arm (such as an alkyl, alkoxy, aminoalkyl or amidoalkyl chain) and a reactive group which, after triple strand formation with the target sequence of DNA, is capable of reacting with the target DNA to form a covalent bond therewith. Each crosslinking agent of the novel modified ODNs is capable of forming a covalent bond with the target DNA. As a result of the covalent bond formation between the modified ODN and both strands of the target DNA sequence, replication and expression of the target DNA sequence is inhibited. Alternatively the duplex DNA is selectively cleaved with enzymes or amino acids, at the alkylation sites for "mapping" or other investigative purposes. Thus, oligonucleotides containing one or two terminal chlorambucil groups attached to the 5 position of uridine or to the phosphate group by a linker were prepared and their ability to crosslink target duplex DNA demonstrated.

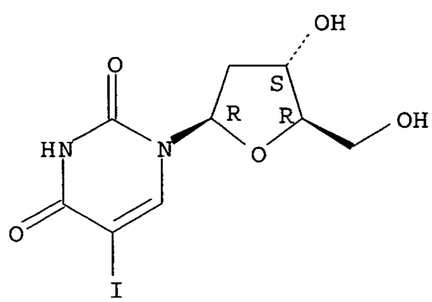
IT **54-42-2**, 5-Iodo-2'-deoxyuridine

RL: RCT (Reactant); RACT (Reactant or reagent)
(bifunctional crosslinking oligonucleotides adapted for linking to target sequence of duplex DNA)

RN 54-42-2 HCAPLUS

CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

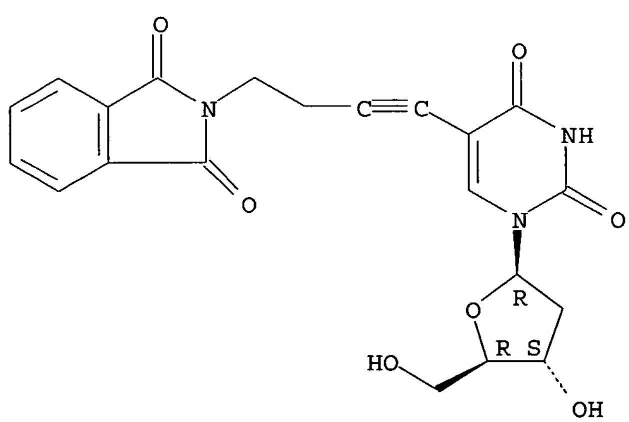


IT **134140-85-5P 134141-36-9P 161601-19-0P 161601-20-3P 186696-59-3P** ,
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(bifunctional crosslinking oligonucleotides adapted for linking to target sequence of duplex DNA)

RN 134140-85-5 HCAPLUS

CN Uridine, 2'-deoxy-5-[4-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 134141-36-9 HCAPLUS

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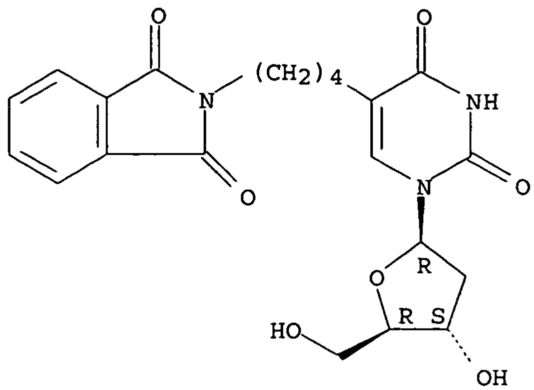
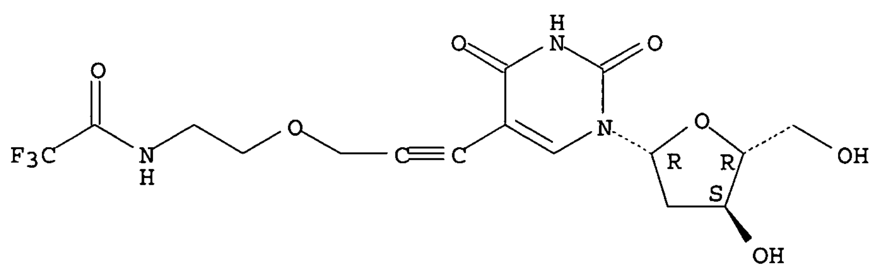
Absolute stereochemistry.



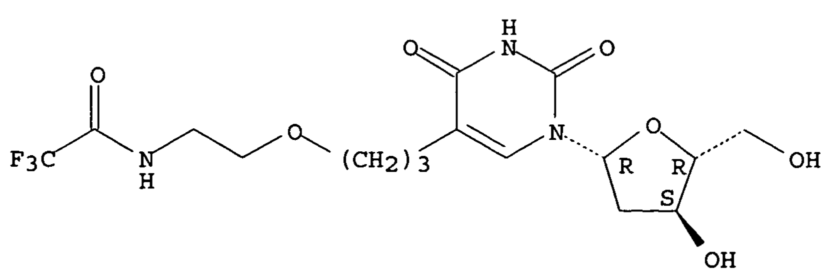
RN 161601-19-0 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]-1-propynyl]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



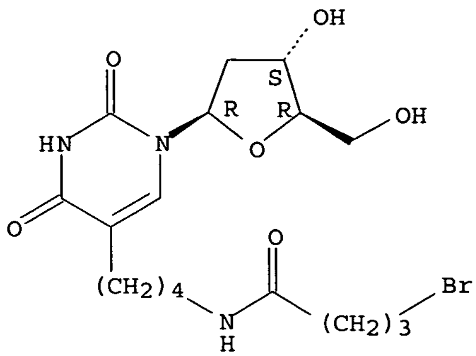
RN 161601-20-3 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]propyl]- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.



RN 186696-59-3 HCAPLUS
CN Uridine, 5-[4-[(4-bromo-1-oxobutyl)amino]butyl]-2'-deoxy- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.



REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:661664 HCAPLUS
DOCUMENT NUMBER: 135:237547
TITLE: Modified oligonucleotides containing pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines for mismatch discrimination
INVENTOR(S): Dempcy, Robert O.; **Gall, Alexander A.**; Lokhov, Sergey G.; Afonina, Irina A.; Singer, Michael J.; Kutyavin, Igor V.; Vermeulen, Nicolaas M. J.
PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 116 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001064958	A2	20010907	WO 2001-US6900	20010301
WO 2001064958	A3	20020328		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6949367	B1	20050927	US 2000-724959	20001128
CA 2401781	AA	20010907	CA 2001-2401781	20010301
AU 2001043403	A5	20010912	AU 2001-43403	20010301
EP 1261616	A2	20021204	EP 2001-916372	20010301
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003525292	T2	20030826	JP 2001-563645	20010301
PRIORITY APPLN. INFO.:			US 2000-186046P	P 20000301
			US 2000-724959	A 20001128
			US 1998-54830	A1 19980403
			US 1998-54832	A1 19980403

US 1999-431385 A2 19991101
US 2000-640953 A2 20000816
WO 2001-US6900 W 20010301

AB Modified oligonucleotides are provided containing bases selected from unsubstituted and 3-substituted pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines, and optionally have attached minor groove binders and reporter groups. These modified oligonucleotides may be used in hybridization and primer extension assays. Thus, a thermodn. investigation of mismatch discrimination was performed on a set of oligonucleotides hybridized to a set of targets perfectly matched or containing a single mismatch. The target sequences contained (a) normal A's, (b) 4-amino-3-(prop-1-ynyl)pyrazolo[3,4-d]pyrimidine (PPPA) in place of A, (c) normal A's and a 3' minor groove binder, or (d) PPPA in place of A and a 3' minor groove binder. Determination of Tm's and ΔΔG050's clearly indicated increased mismatch discrimination when PPPA is substituted for A and even larger discrimination when PPPA is combined with a minor groove binder.

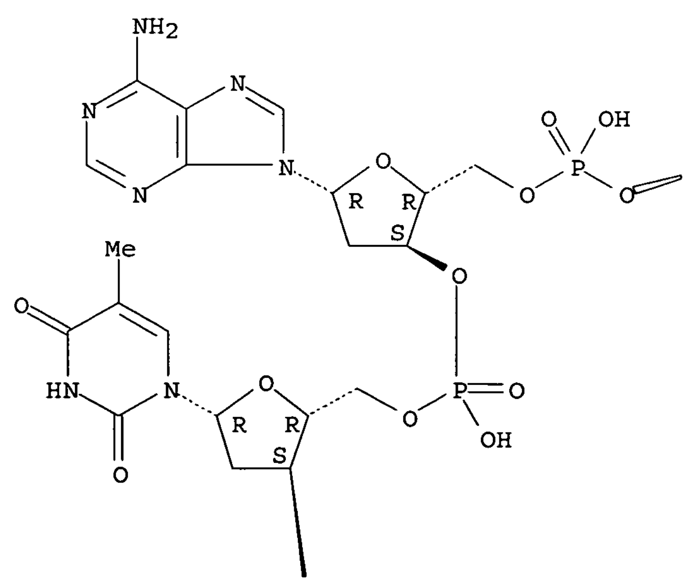
IT **342791-52-0 342791-55-3 359786-55-3**
359786-56-4 359786-57-5
RL: PRP (Properties)
(Unclaimed; modified oligonucleotides containing pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines for mismatch discrimination)

RN 342791-52-0 HCAPLUS

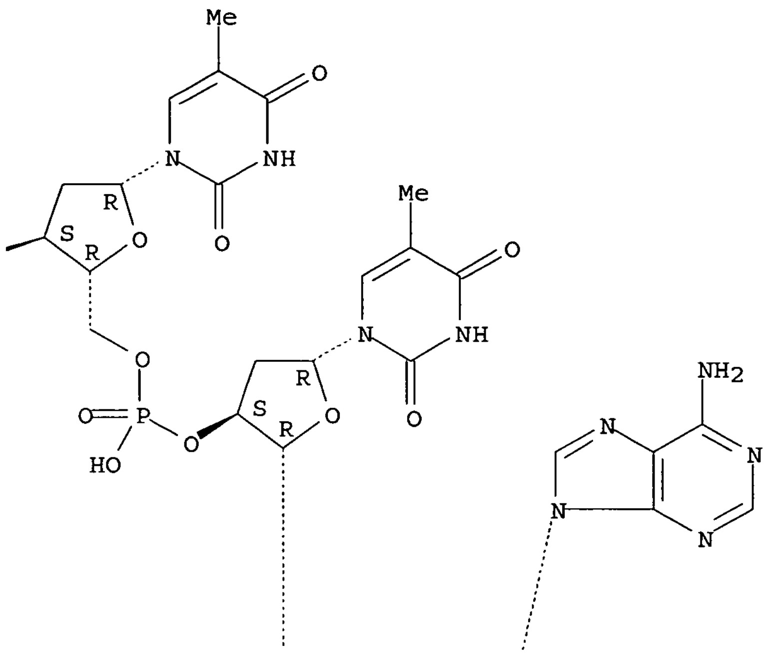
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

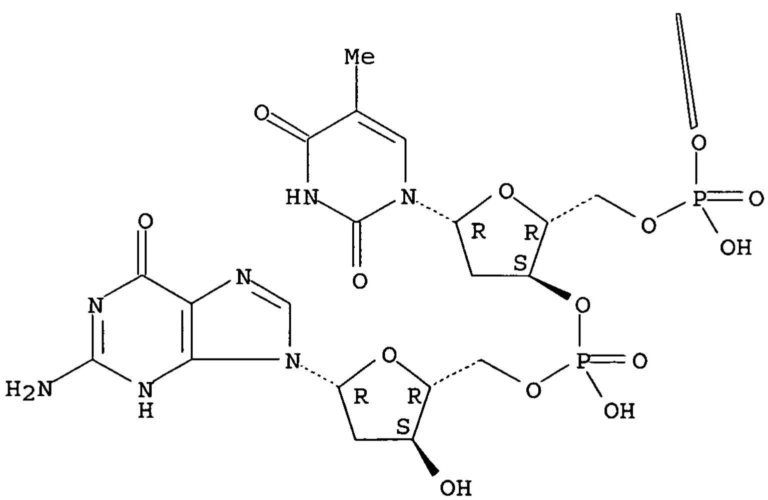
PAGE 1-A



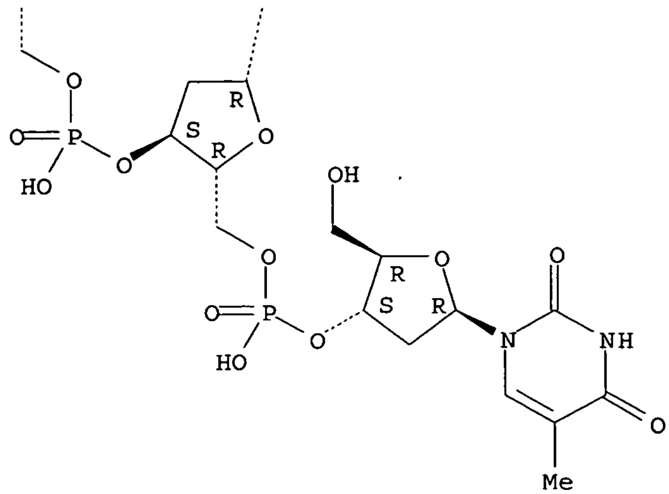
PAGE 1-B



PAGE 2-A



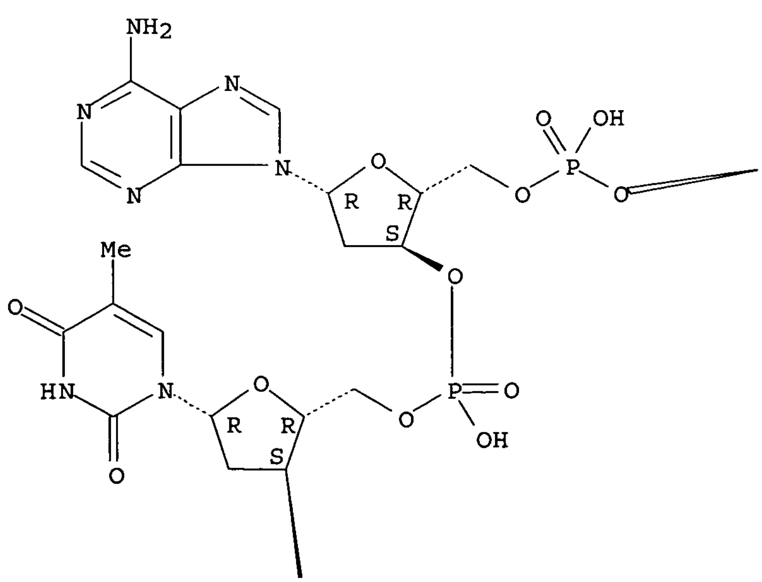
PAGE 2-B



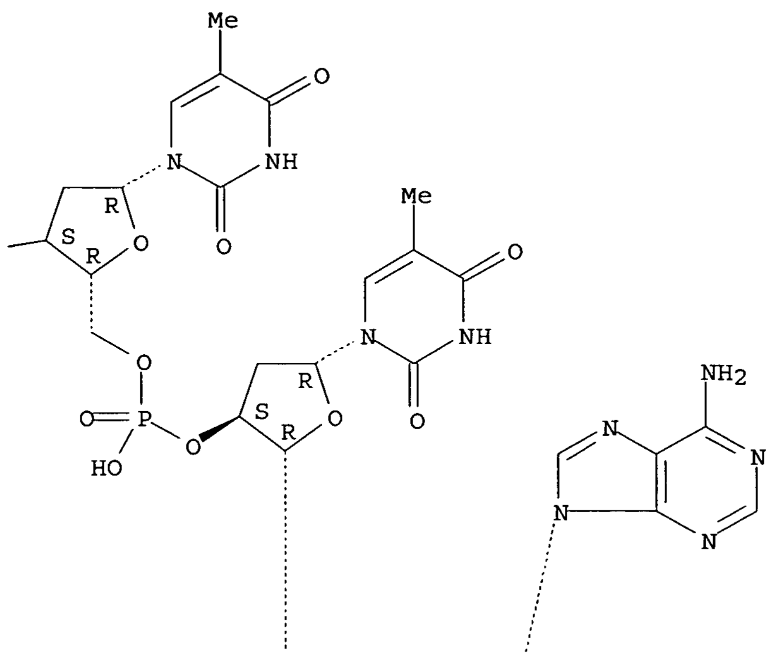
RN 342791-55-3 HCAPLUS
CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

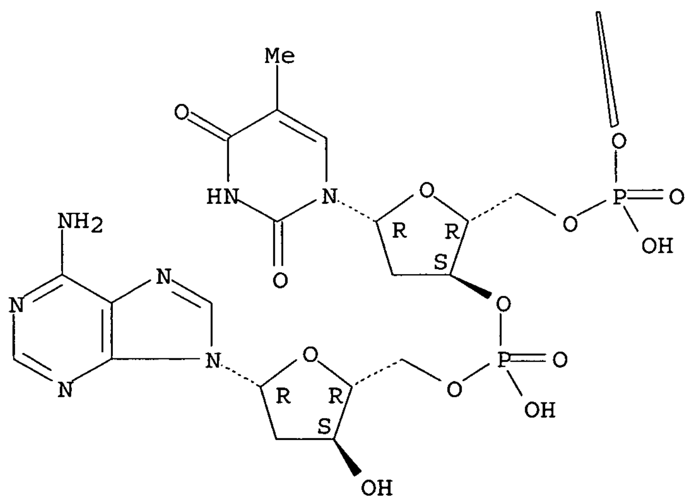
PAGE 1-A



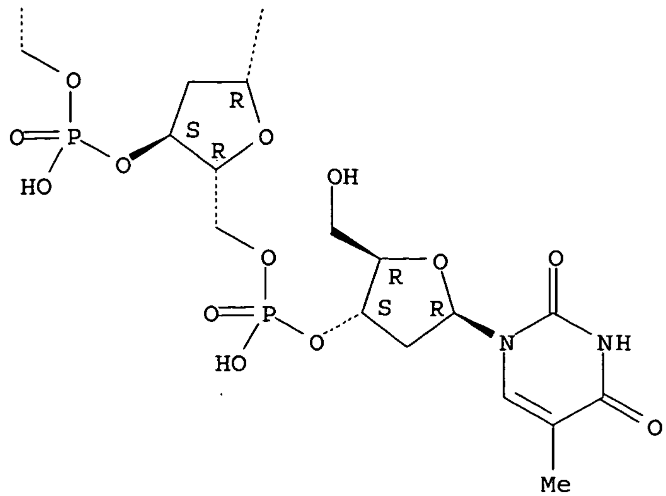
PAGE 1-B



PAGE 2-A



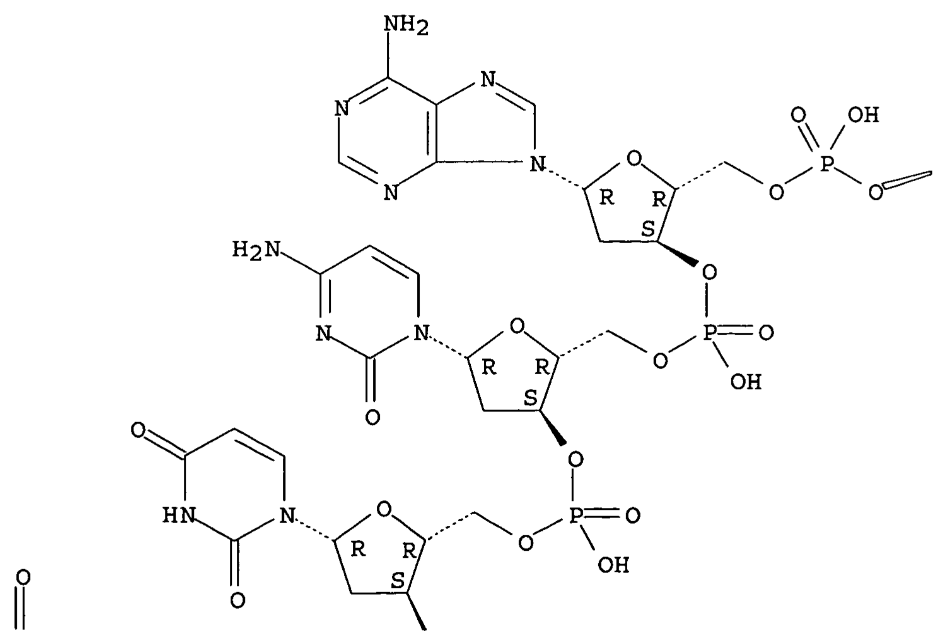
PAGE 2-B



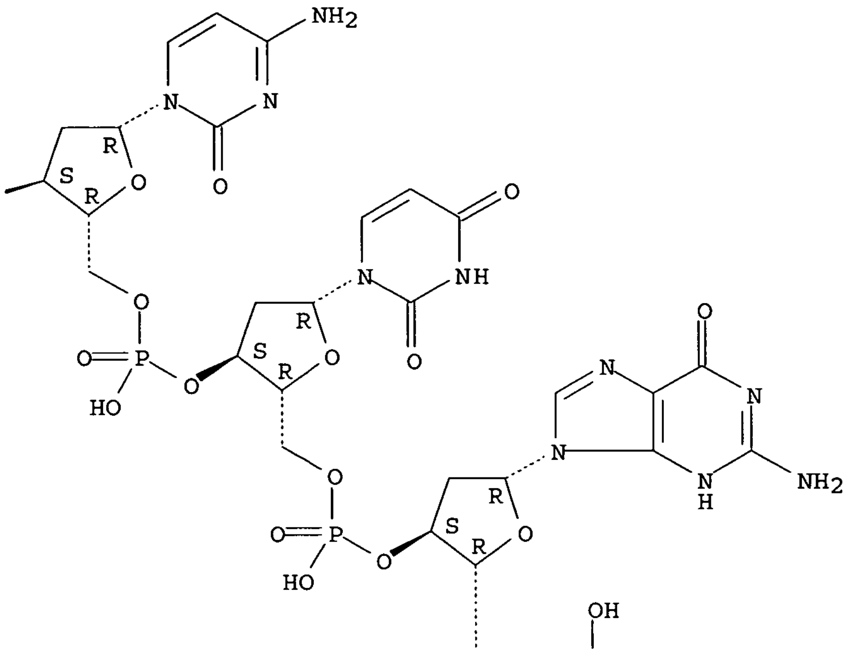
RN 359786-55-3 HCAPLUS
CN Guanosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyuridylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyuridylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

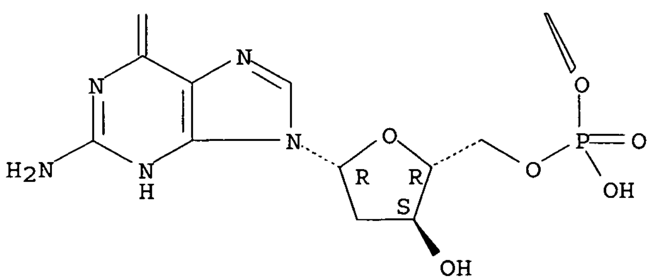
PAGE 1-A



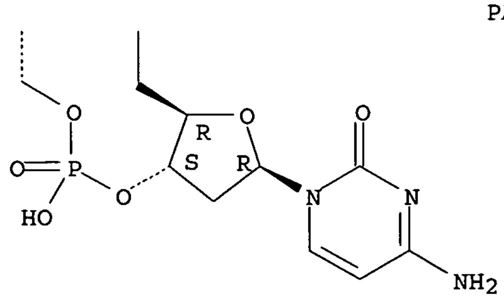
PAGE 1-B



PAGE 2-A



PAGE 2-B

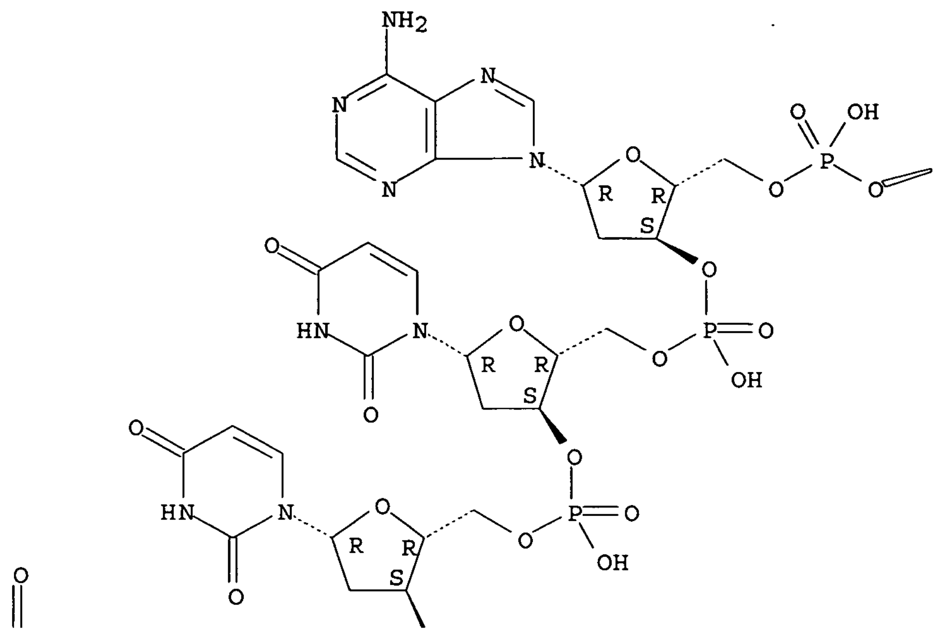


RN 359786-56-4 HCAPLUS
CN Guanosine, 2'-deoxyuridylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-
2'-deoxyuridylyl-(3'→5')-2'-deoxyuridylyl-(3'→5')-2'-

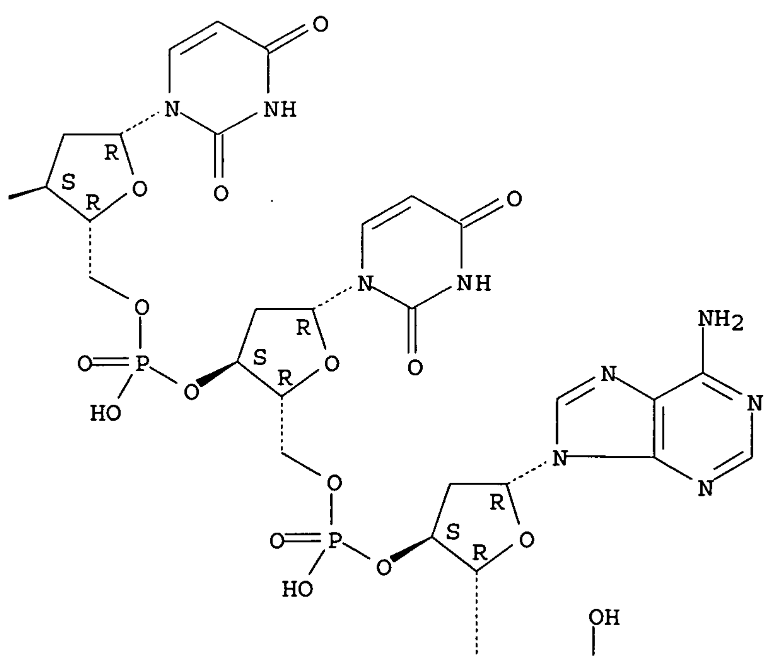
deoxyadenylyl-(3'→5')-2'-deoxyuridylyl-(3'→5')-2'-
deoxyuridylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

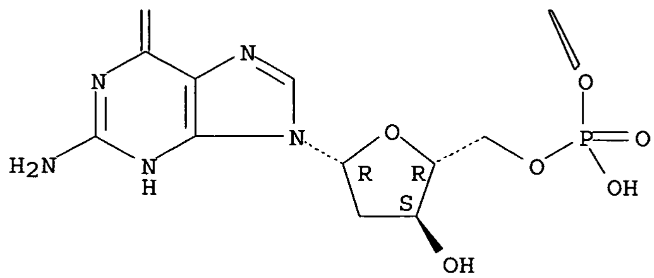
PAGE 1-A



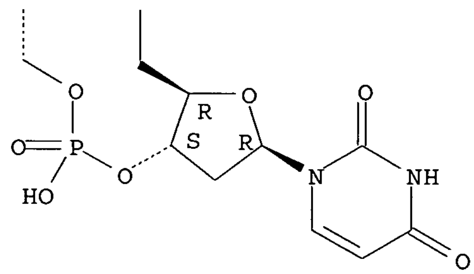
PAGE 1-B



PAGE 2-A



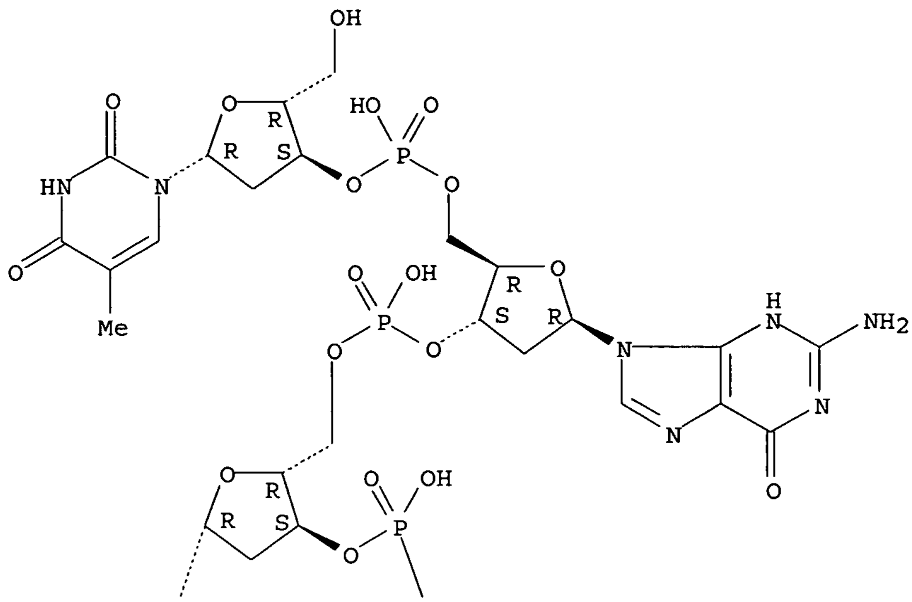
PAGE 2-B



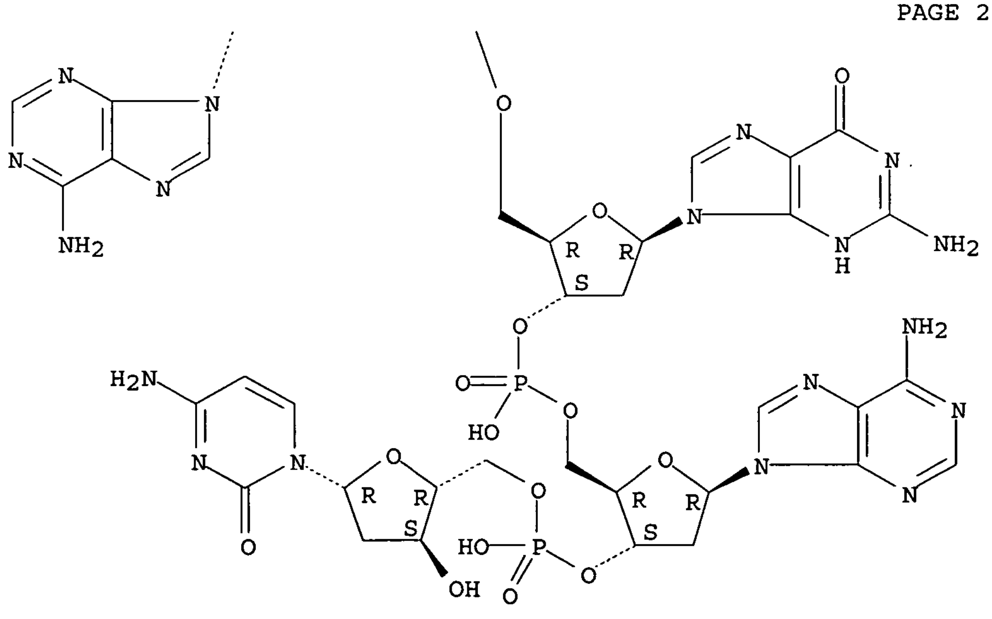
RN 359786-57-5 HCAPLUS
CN Cytidine, thymidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

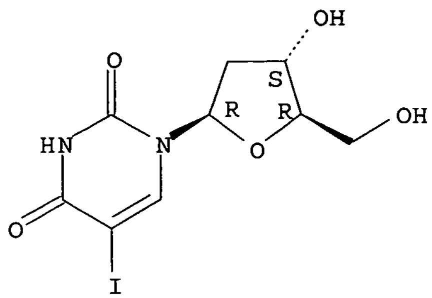


IT 54-42-2, 5-Iodo-2'-deoxyuridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(modified oligonucleotides containing pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines for mismatch discrimination)

RN 54-42-2 HCAPLUS

CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

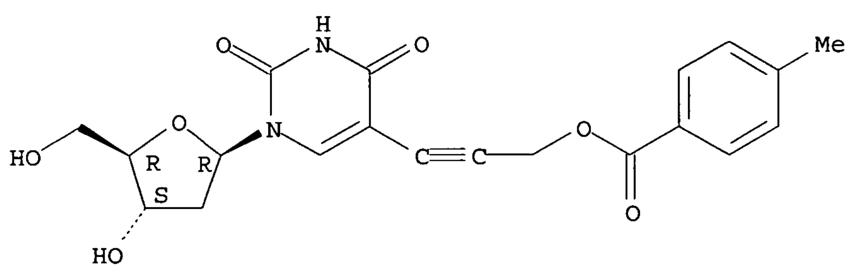


IT **358979-22-3P 358979-23-4P 358979-24-5P**
358979-54-1P 358979-55-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(modified oligonucleotides containing pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines for mismatch discrimination)

RN 358979-22-3 HCAPLUS

CN Uridine, 2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

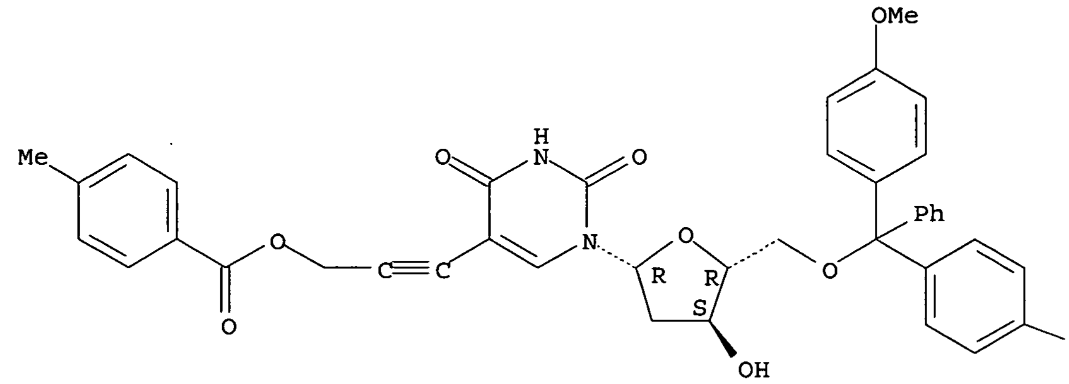


RN 358979-23-4 HCAPLUS

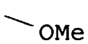
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



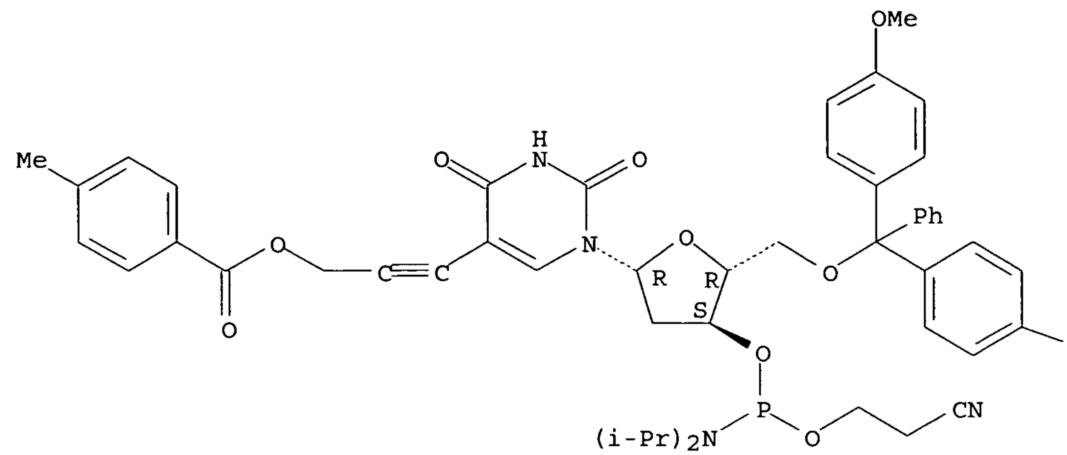
PAGE 1-B



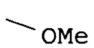
RN 358979-24-5 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[3-[(4-methylbenzoyl)oxy]-1-propynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

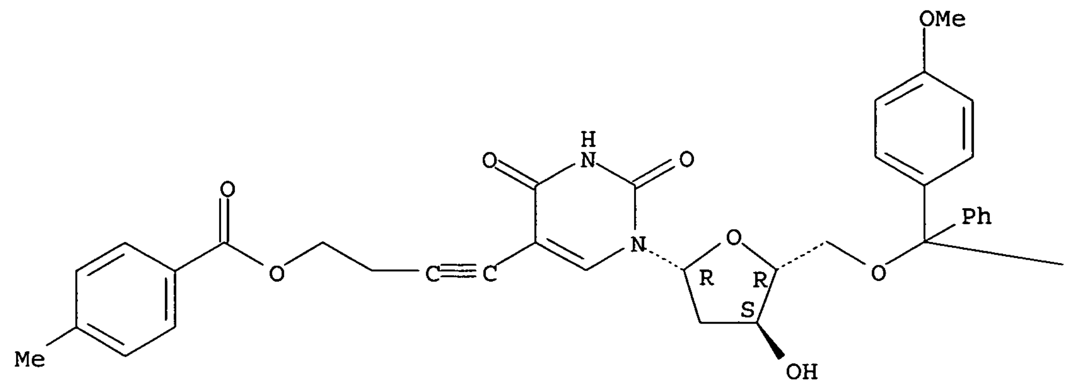


RN 358979-54-1 HCAPLUS

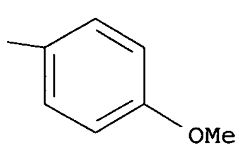
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



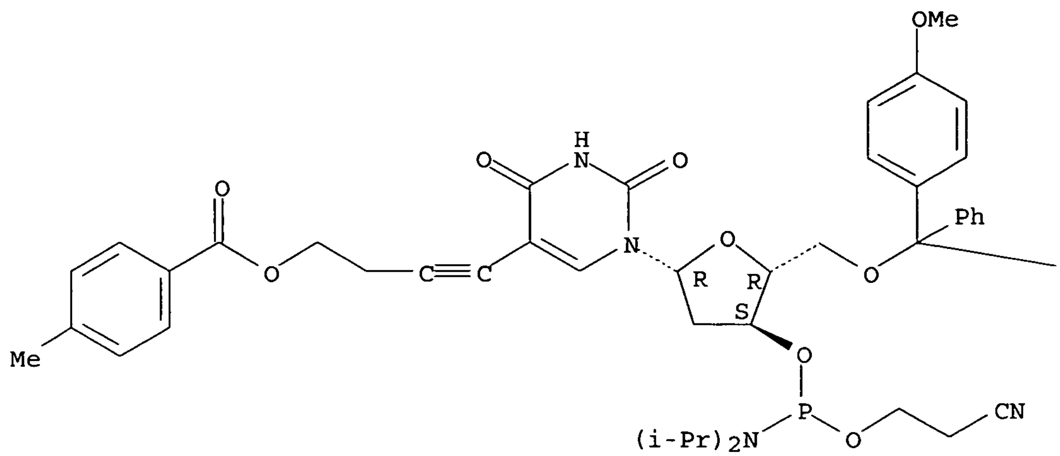
PAGE 1-B



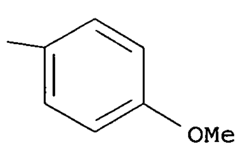
RN 358979-55-2 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-5-[4-[(4-methylbenzoyl)oxy]-1-butynyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



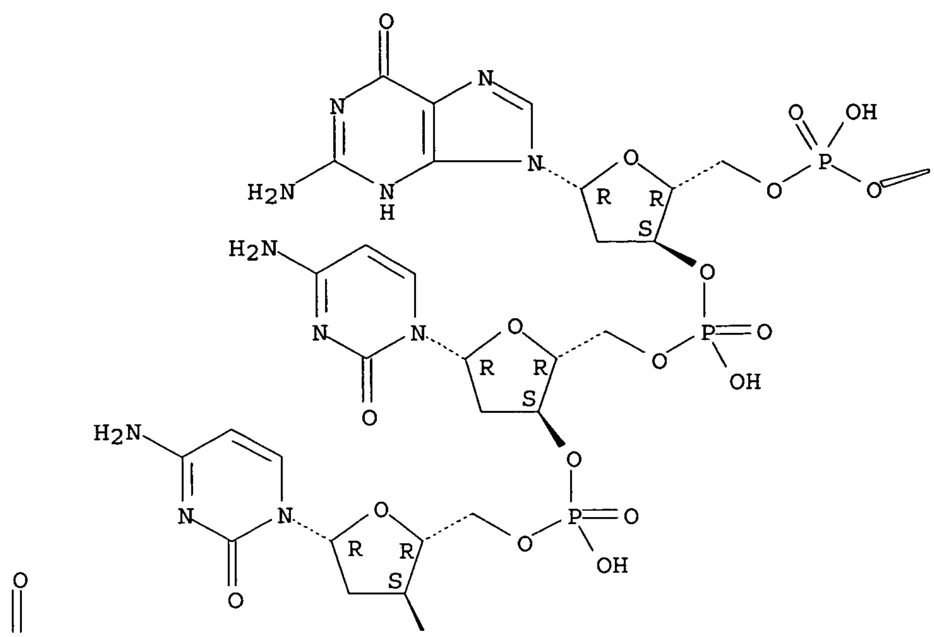
IT 327022-86-6 342791-45-1 342791-48-4
359786-51-9 359786-52-0 359786-53-1
359786-54-2
RL: PRP (Properties)
(unclaimed sequence; modified oligonucleotides containing pyrazolo[3,4-d]pyrimidines and 5-substituted pyrimidines for mismatch discrimination)

RN 327022-86-6 HCAPLUS

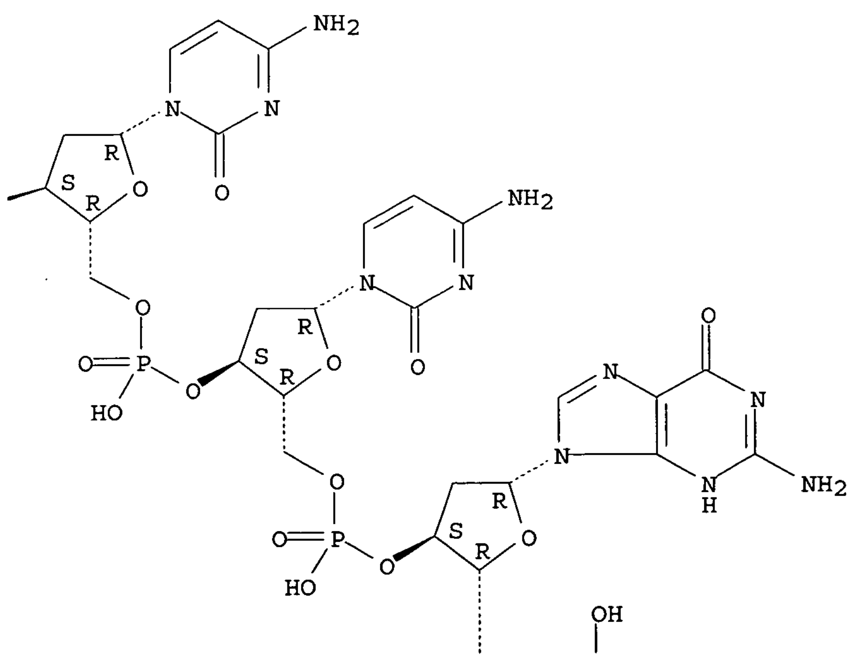
CN Guanosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

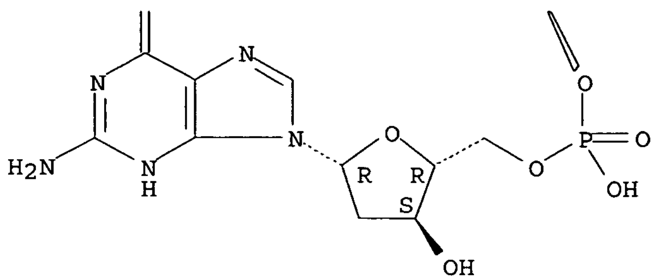
PAGE 1-A



PAGE 1-B



PAGE 2-A



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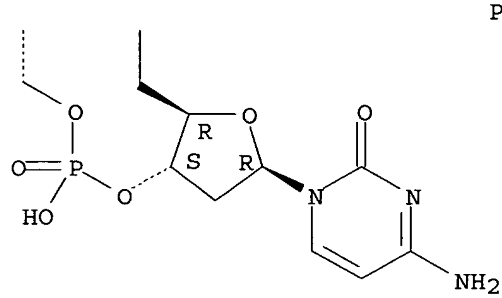
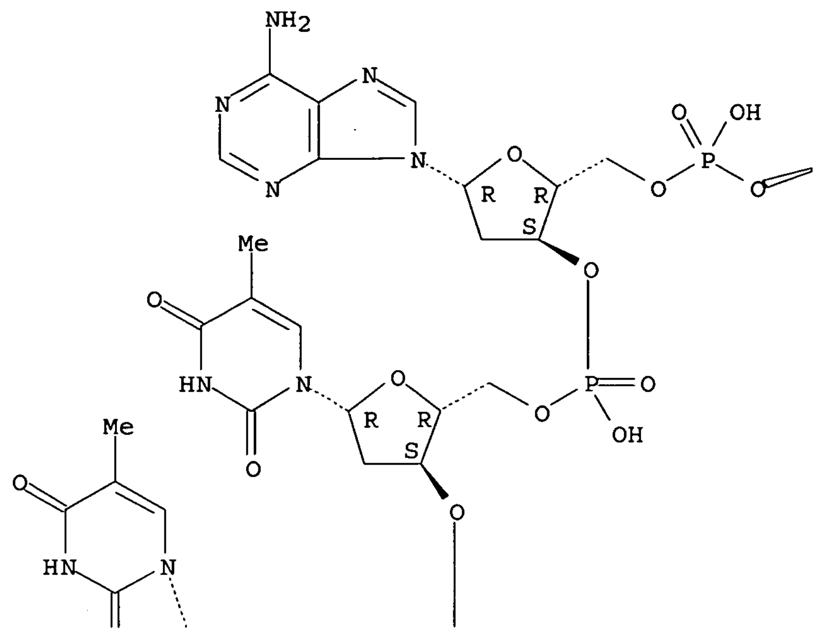


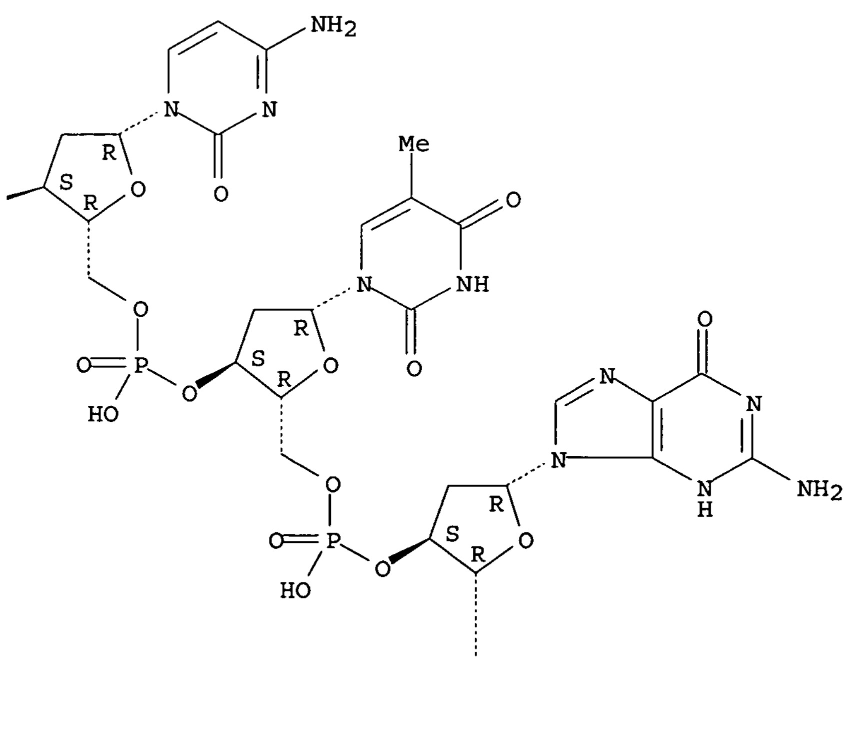
RN 342791-45-1 HCAPLUS
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

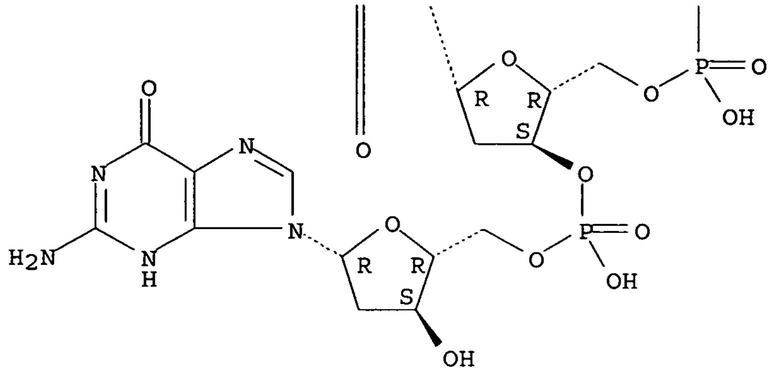
PAGE 1-A



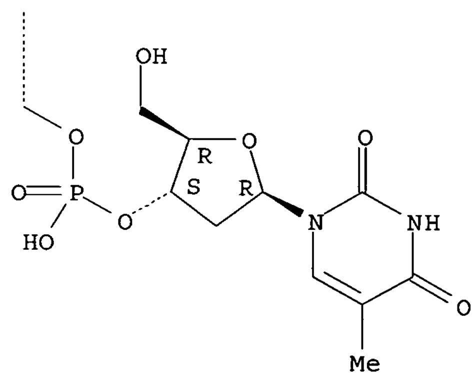
PAGE 1-B



PAGE 2-A



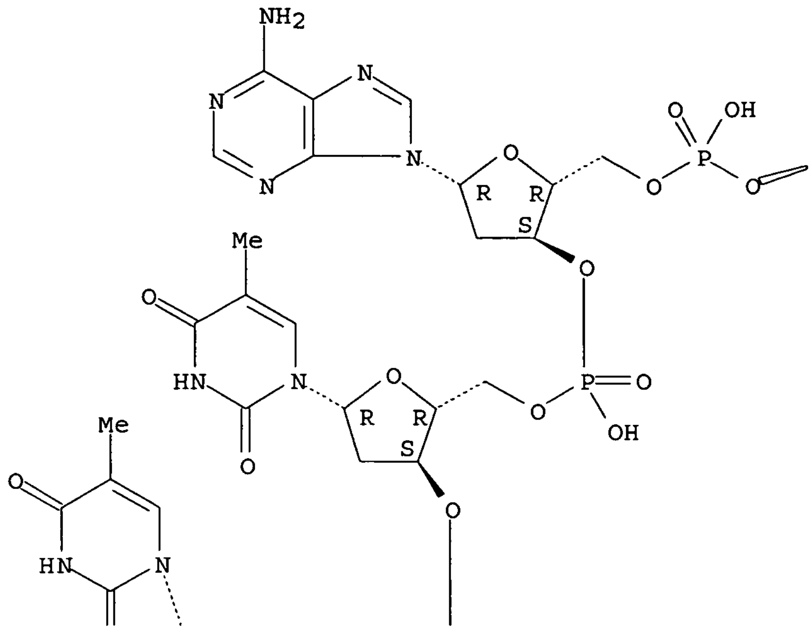
PAGE 2-B



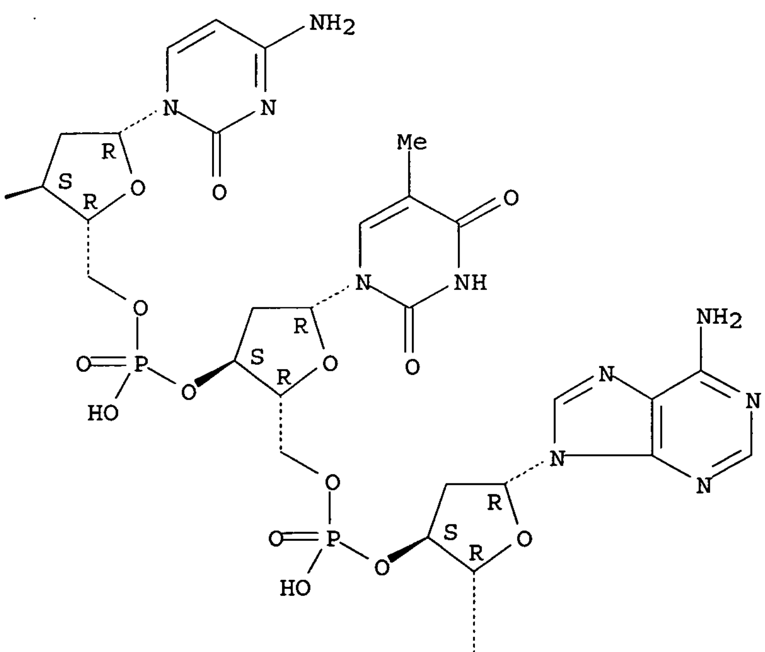
RN 342791-48-4 HCAPLUS
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

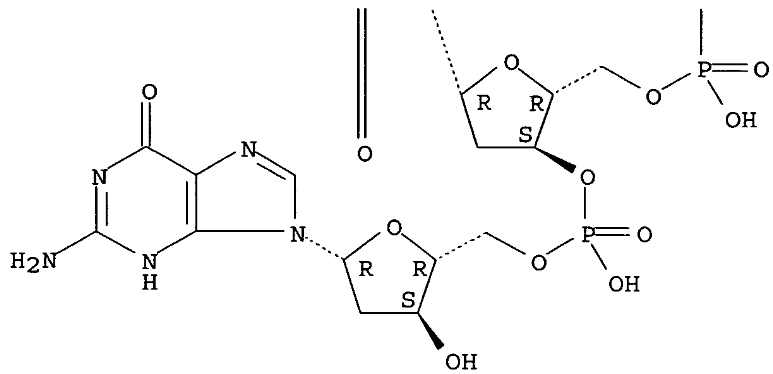
PAGE 1-A



PAGE 1-B



PAGE 2-A



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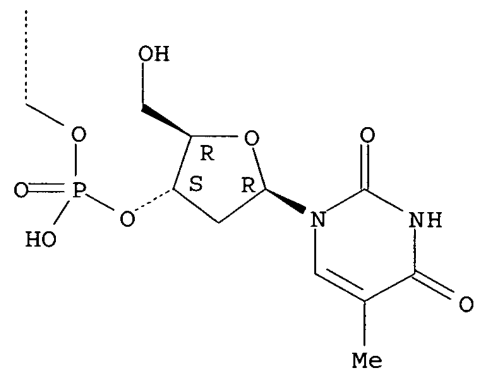
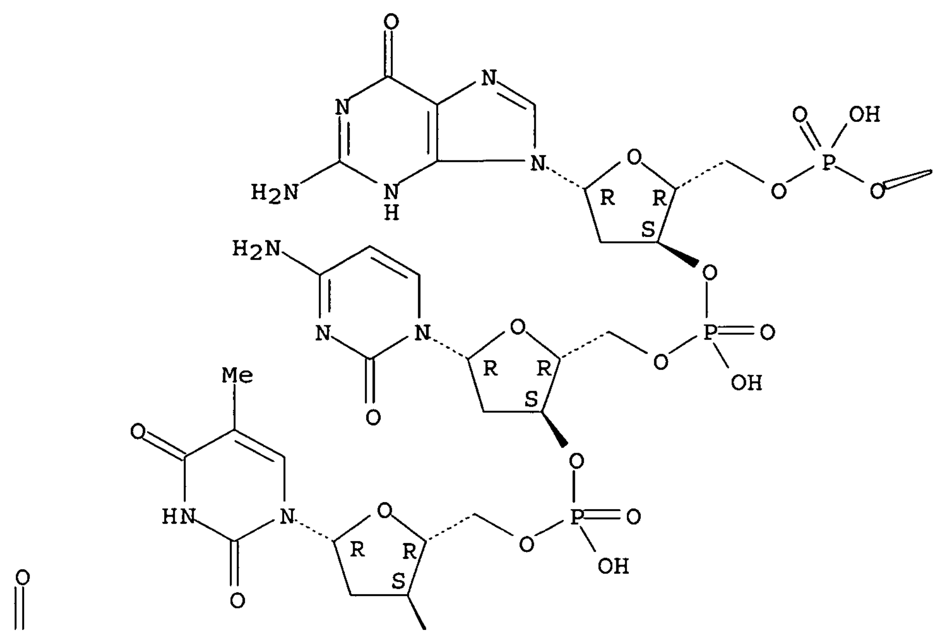


RN 359786-51-9 HCAPLUS
CN Guanosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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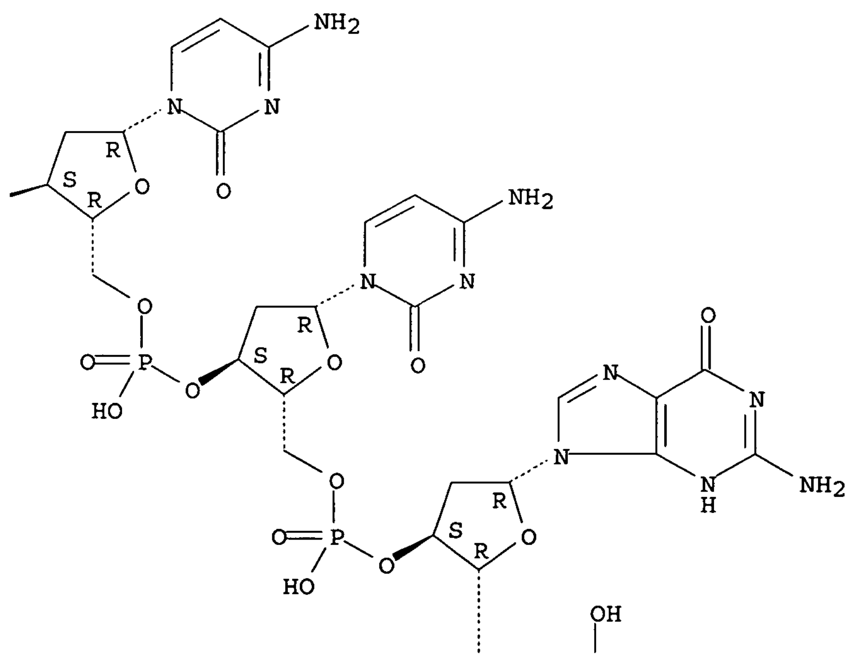

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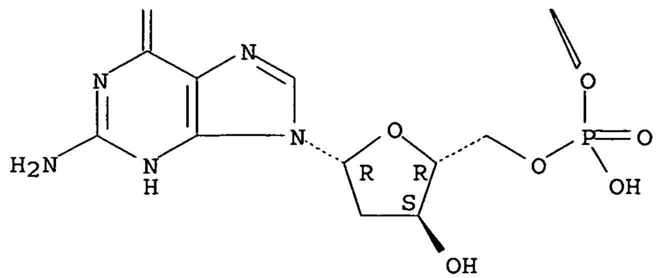
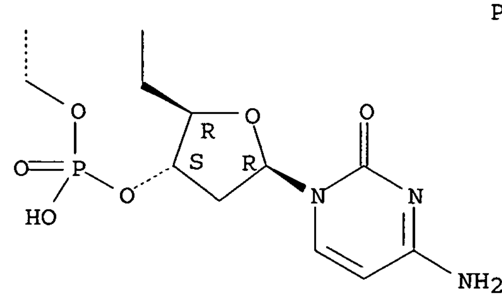


PAGE 2-B

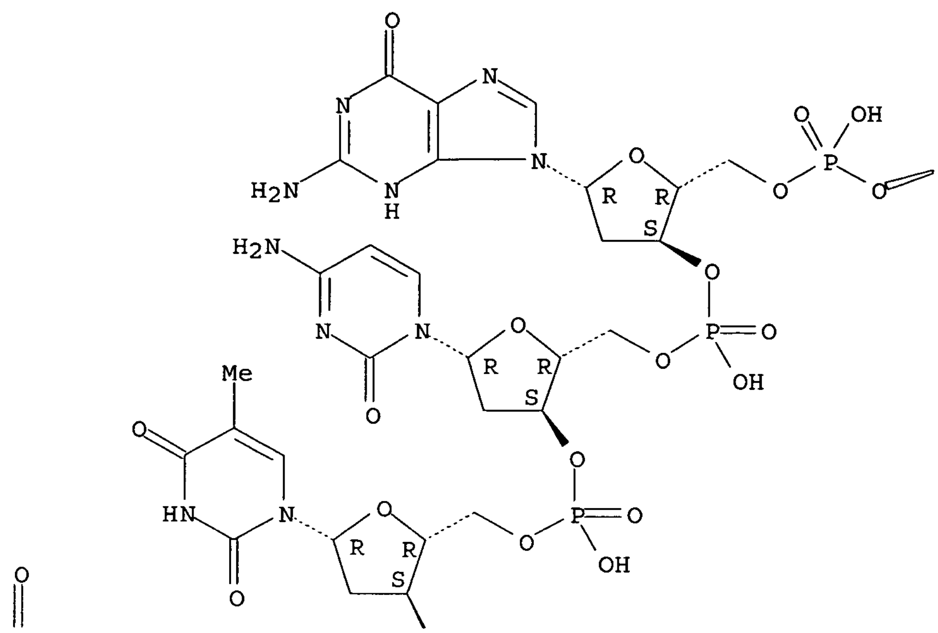


RN 359786-52-0 HCAPLUS

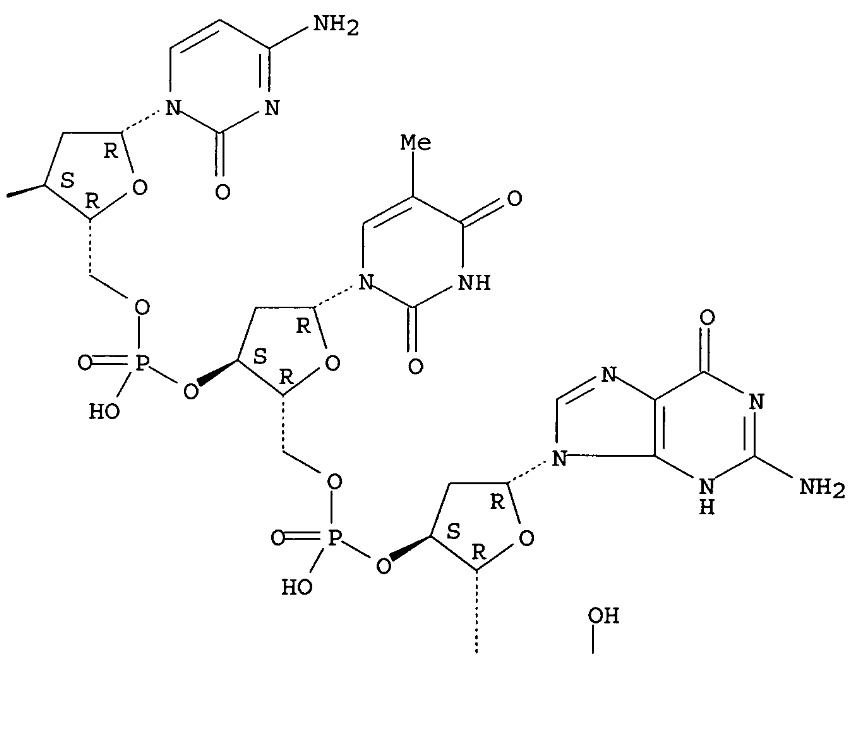
CN Guanosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

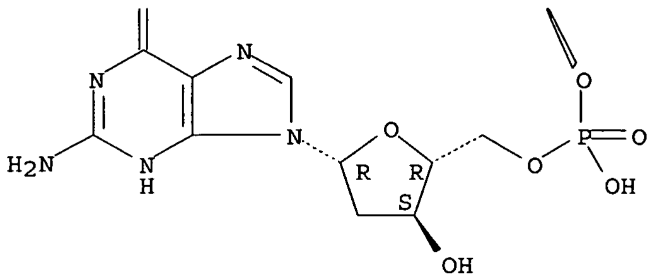
PAGE 1-A



PAGE 1-B



PAGE 2-A



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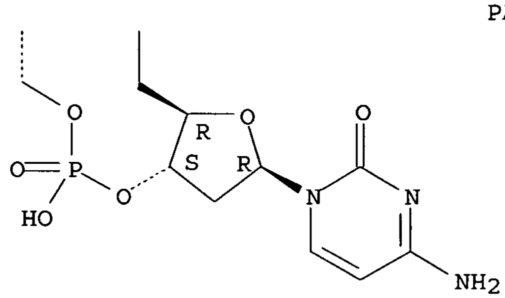
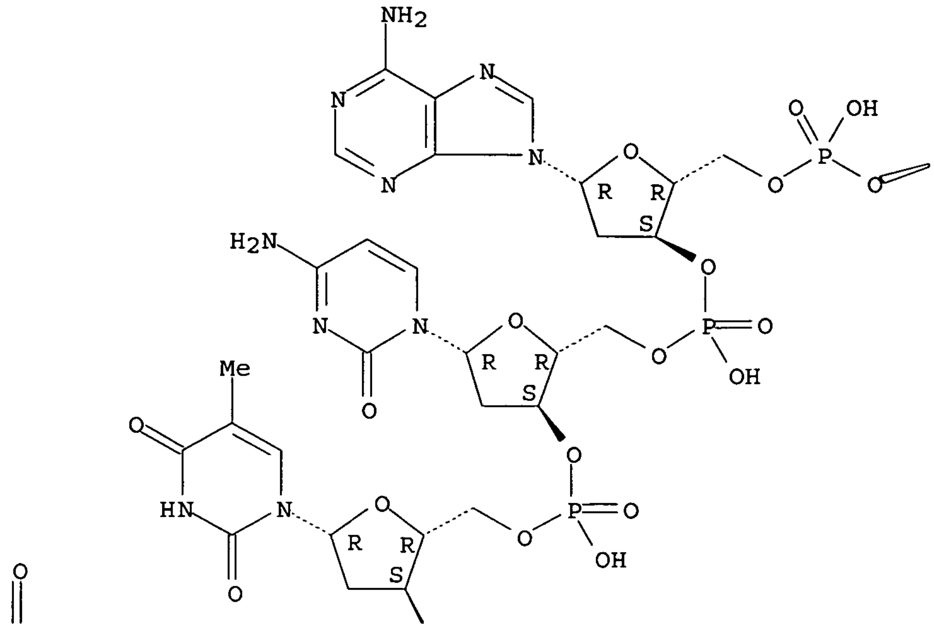


RN 359786-53-1 HCAPLUS
CN Guanosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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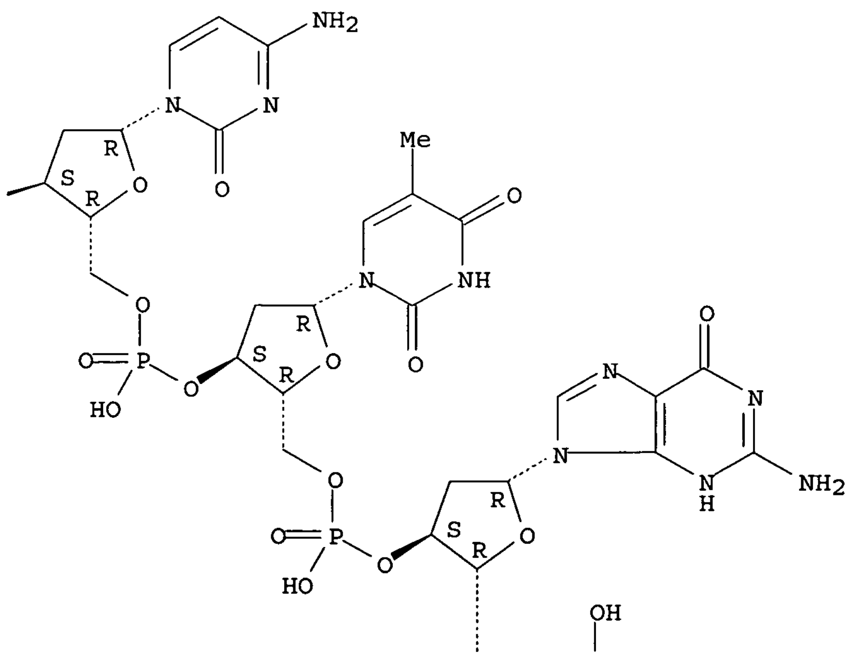

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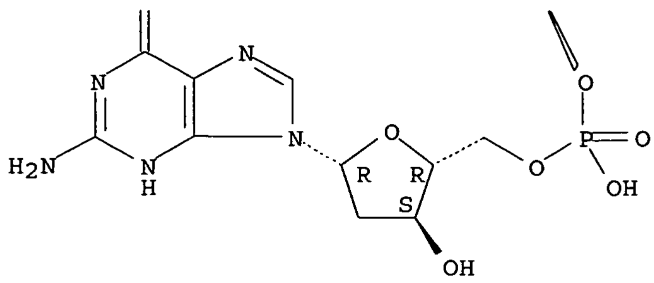

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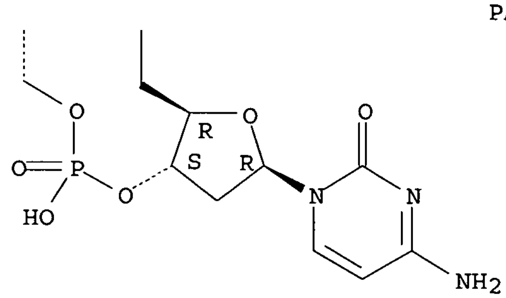

RN 359786-54-2 HCAPLUS
CN Guanosine, thymidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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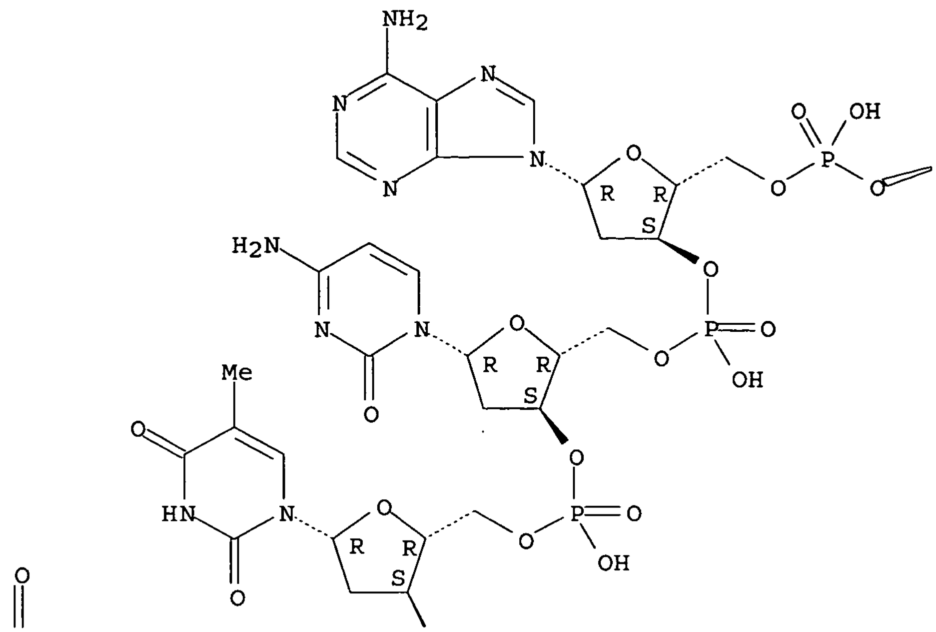
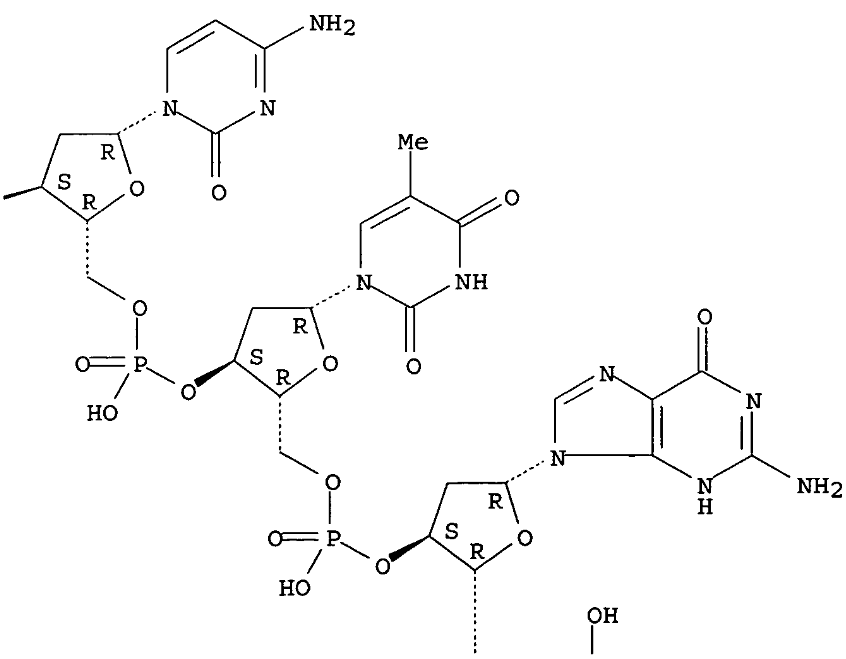
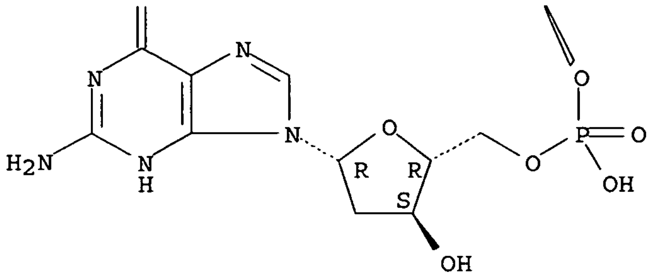


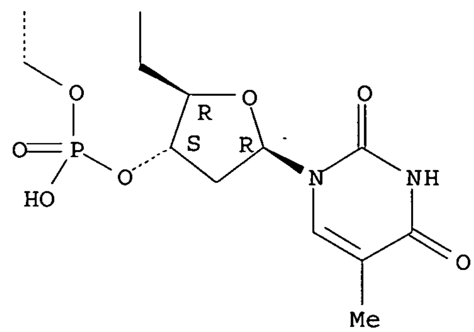
PAGE 1-B



PAGE 2-A



PAGE 2-B



L43 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:754456 HCAPLUS
DOCUMENT NUMBER: 133:306344
TITLE: Targeted mutagenesis in living cells using modified oligonucleotides
INVENTOR(S): Meyer, Rich B., Jr.; Gamper, Howard B.; Kutyavin, Igor V.; **Gall, Alexander A.**
PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: U.S., 19 pp., Cont.-in-part of U.S. 5,849,482. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6136601	A	20001024	US 1997-827117		19970326
US 5849482	A	19981215	US 1995-485611		19950607
PRIORITY APPLN. INFO.:			US 1991-748138	B1	19910821
			US 1994-178733	B2	19940107
			US 1995-485611	A2	19950607
			US 1988-250474	B2	19880928
			US 1989-353857	B1	19890518
			US 1993-11482	B2	19930126
			US 1993-49807	B1	19930420
			US 1994-226949	A2	19940627
			US 1994-334490	A	19941104

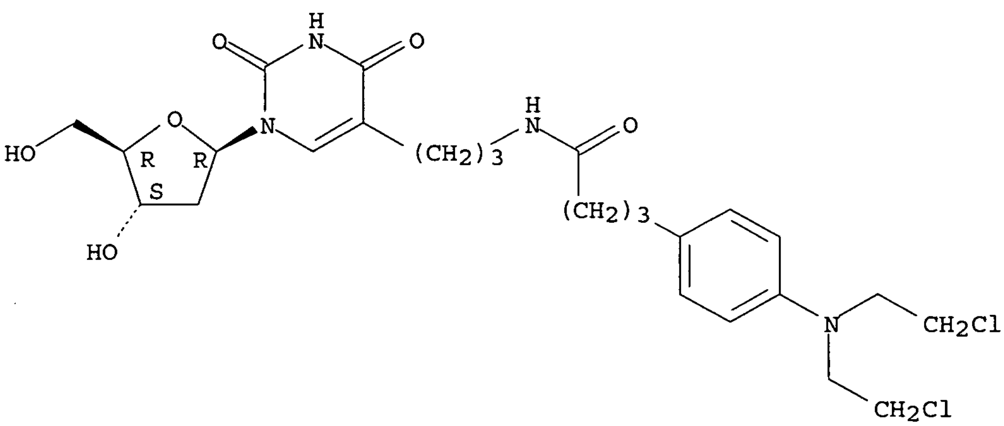
AB A method for introducing a site-specific mutation into a target polynucleotide sequence is presented. The method involves the use of an oligonucleotide capable of binding to the target sequence, either by triplex formation (mediated by Hoogsteen, reverse Hoogsteen or equivalent base pairing) or by Watson/Crick base pairing (in the presence of a recombinase enzyme). The oligonucleotide of the invention is modified by the covalent attachment of one or more electrophilic groups. When a modified oligonucleotide is bound to its target sequence, the electrophilic group is able to interact with a nearby nucleotide in the target sequence, causing a modification to the nucleotide that results in a change in nucleotide sequence. Compns. used in the practice of the method are also disclosed.

IT **171258-27-8D**, oligonucleotides containing
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(targeted mutagenesis in living cells using modified oligonucleotides)

RN 171258-27-8 HCAPLUS

CN Uridine, 5-[3-[[4-[4-[bis(2-chloroethyl)amino]phenyl]-1-oxobutyl]amino]propyl]-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 133 THERE ARE 133 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:505631 HCAPLUS
DOCUMENT NUMBER: 131:154471
TITLE: Targeted mutagenesis in living cells using modified oligonucleotides
INVENTOR(S): Meyer, Rich B., Jr.; Gamper, Howard B.; Kutyavin, Igor V.; **Gall, Alexander A.**
PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: U.S., 20 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5935830	A	19990810	US 1997-827116	19970326

US 5849482	A	19981215	US 1995-485611		19950607
CA 2223584	AA	19961219	CA 1996-2223584		19960607
PRIORITY APPLN. INFO.:			US 1995-485611	A2	19950607
			US 1988-250474	B2	19880928
			US 1989-353857	B1	19890518
			US 1991-748138	B1	19910821
			US 1993-11482	B2	19930126
			US 1993-49807	B1	19930420
			US 1994-178733	B2	19940107
			US 1994-226949	A2	19940627
			US 1994-334490	A	19941104

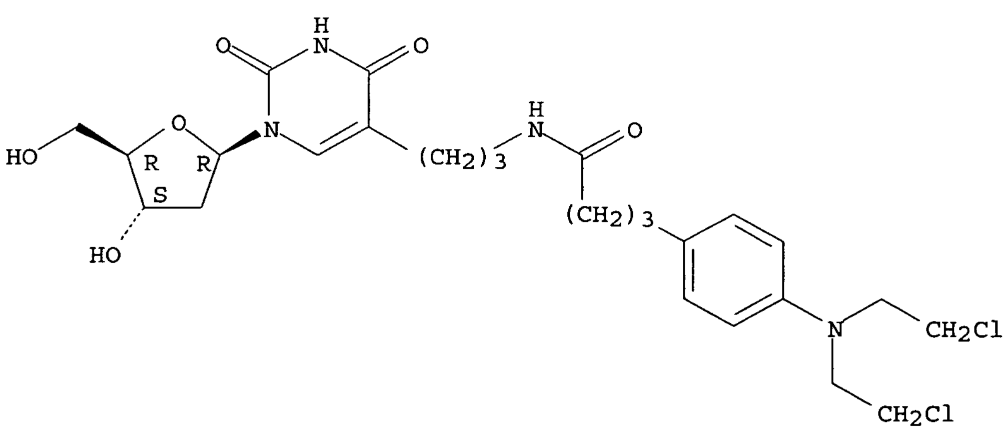
AB A method for introducing a site-specific mutation into a target polynucleotide sequence is presented. The method involves the use of an oligonucleotide capable of binding to the target sequence, either by triplex formation (mediated by Hoogsteen, reverse Hoogsteen or equivalent base pairing) or by Watson/Crick base pairing (in the presence of a recombinase enzyme). The oligonucleotide of the invention is modified by the covalent attachment of one or more electrophilic groups. When a modified oligonucleotide is bound to its target sequence, the electrophilic group is able to interact with a nearby nucleotide in the target sequence, causing a modification to the nucleotide that results in a change in nucleotide sequence. Compns. used in the practice of the method are disclosed. Also disclosed are arm-leaving group structure having the formula -A-L such as (CH2)qY(CH2)mL, (CH2)qNHCO(CH2)m(X)n'N(R1)(CH2)pL, or (CH2)q'O(CH2)q''NHCO(CH2)m(X)n'N(R1)(CH2)pL (q=0-8, q'=1-7; Y=NH2, OH, SH, COOH, C≡CH; X= (Cl, Br, lower alkyl, lower alkoxy-substituted) Ph; n'=0, 1; p= 1-6; R1=H, lower alkyl, or (CH2)pL; L=Cl, Br, I, SO2R2, S+R3; R3,R4=C1-6 alkyl, aryl, heteroaryl, or R3 and R4 form a C1-6-alkylene bridge).

IT **171258-27-8D**, oligonucleotides containing
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(targeted mutagenesis in living cells using modified oligonucleotides)

RN 171258-27-8 HCAPLUS

CN Uridine, 5-[3-[[4-[4-[bis(2-chloroethyl)amino]phenyl]-1-oxobutyl]amino]propyl]-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



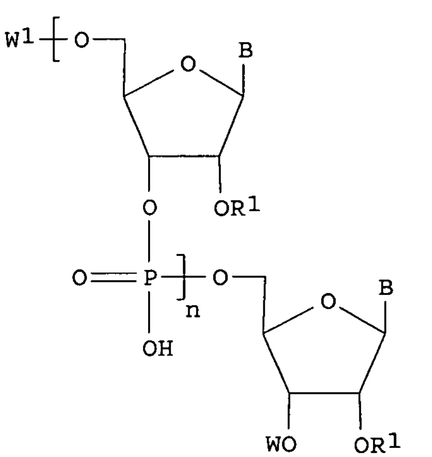
REFERENCE COUNT: 155 THERE ARE 155 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:513501 HCAPLUS
DOCUMENT NUMBER: 127:190989
TITLE: Preparation of N-alkylthiopurine-containing oligoribonucleotides as virucides
INVENTOR(S): Meyer, Rich B., Jr.; **Gall, Alexander A.**; Broom, Arthur D.
PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: U.S., 20 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5652359	A	19970729	US 1993-162590	19931202
PRIORITY APPLN. INFO.:			US 1993-162590	19931202

OTHER SOURCE(S): MARPAT 127:190989
GI


I

AB Oligoribonucleotides containing 1-N-alkyl-6-thiopurine, 3-N-alkyl-4-thiopyrimidine and 5-N-alkyl-4-thiopyrazolopyrimidine bases I (n = 5-99; R1 = C1-C6 alkyl, C2-C6 alkenyl; W, W1 = H, (un)substituted phosphate; B = N-alkylthiopurine) and the corresponding 2'-O-alkylated or allylated nucleotides demonstrate potent antiviral activity in several assays, including the human immunodeficiency virus reverse transcriptase enzyme assay. The oligonucleotides of the invention contain approx. 5 to 99 nucleotide units, and may include, in addition to the above-noted N-alkylated and thiolated heterocyclic bases, the naturally occurring pyrimidine and purine bases.

IT **115401-96-2P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of N-alkylthiopurine-containing oligoribonucleotides as virucides)

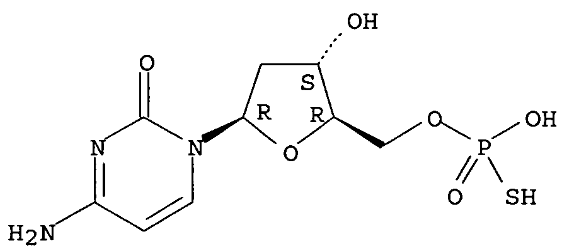
RN 115401-96-2 HCAPLUS

CN Cytidine, 2'-deoxy-, 5'-(dihydrogen phosphorothioate), homopolymer (9CI) (CA INDEX NAME)

CM 1

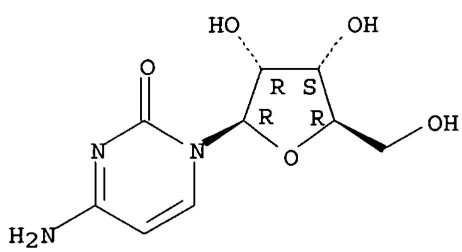
CRN 64145-27-3
CMF C9 H14 N3 O6 P S

Absolute stereochemistry.



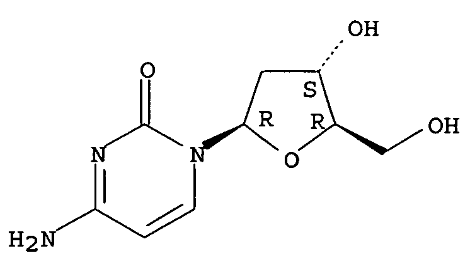
IT **65-46-3**, Cytidine **951-77-9**, 2'-Deoxycytidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of N-alkylthiopurine-containing oligoribonucleotides as virucides)
RN 65-46-3 HCAPLUS
CN Cytidine (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 951-77-9 HCAPLUS
CN Cytidine, 2'-deoxy- (8CI, 9CI) (CA INDEX NAME)

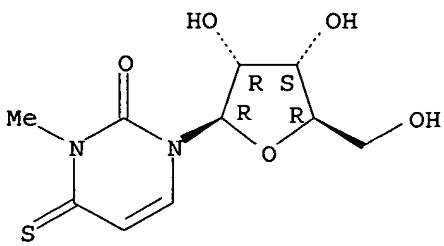
Absolute stereochemistry. Rotation (+).



IT **14985-38-7P 194141-38-3P 194141-40-7P 194141-42-9P 194141-44-1P 194141-45-2P 194141-46-3P**

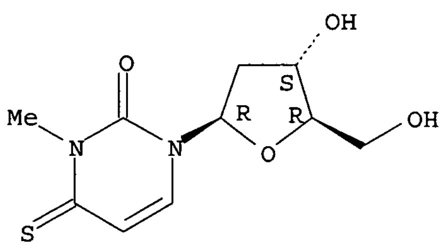
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of N-alkylthiopurine-containing oligoribonucleotides as virucides)
RN 14985-38-7 HCAPLUS
CN Uridine, 3-methyl-4-thio- (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



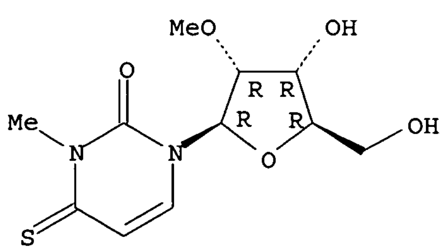
RN 194141-38-3 HCAPLUS
CN Uridine, 2'-deoxy-3-methyl-4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



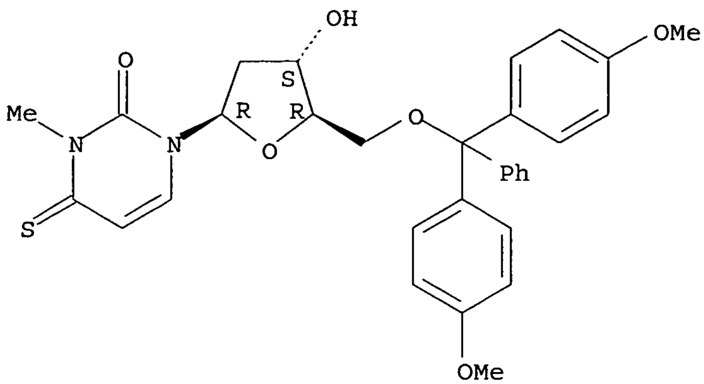
RN 194141-40-7 HCAPLUS
CN Uridine, 3-methyl-2'-O-methyl-4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



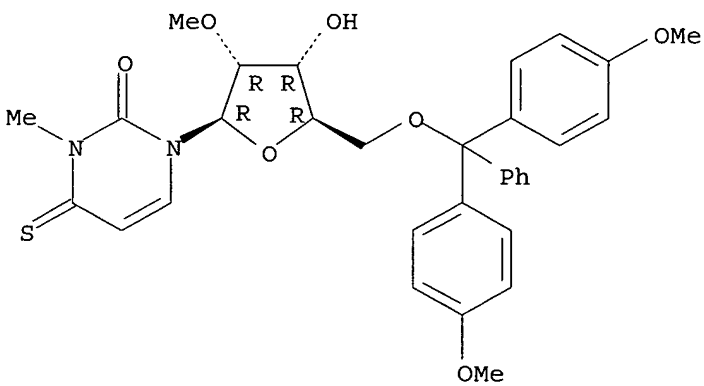
RN 194141-42-9 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-3-methyl-4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



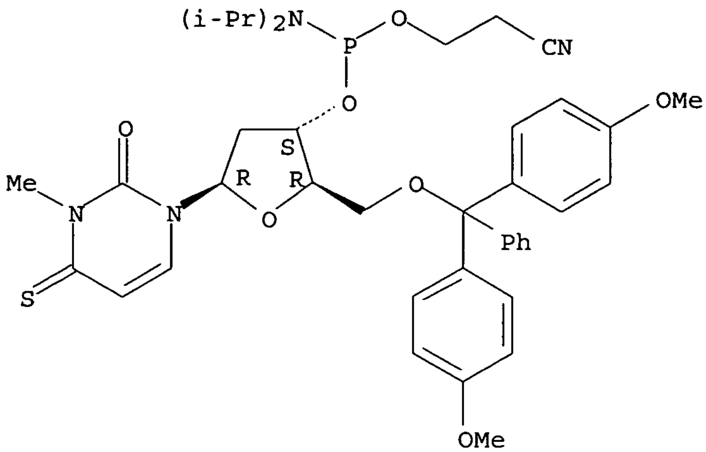
RN 194141-44-1 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-3-methyl-2'-O-methyl-4-thio- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



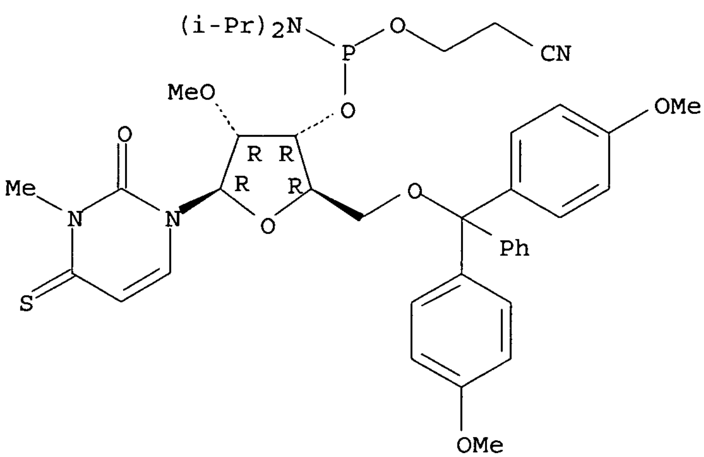
RN 194141-45-2 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-3-methyl-4-thio-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 194141-46-3 HCAPLUS
CN Uridine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-3-methyl-2'-O-methyl-4-thio-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L43 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:148844 HCAPLUS
DOCUMENT NUMBER: 126:153646
TITLE: Oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy
INVENTOR(S): Meyer, Rich B., Jr.; Gamper, Howard B.; Kutyavin, Igor V.; **Gall, Alexander A.**; Petrie, Charles R.; Tabone, John C.; Hurst, Gerald D.
PATENT ASSIGNEE(S): Microprobe Corporation, USA
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8

PATENT INFORMATION:

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     PATENT NO.          KIND   DATE          APPLICATION NO.        DATE
     ---------------     ----   --------      --------------------   --------
     WO 9640711           A1     19961219      WO 1996-US9551          19960607
         W:  AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU,
             IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LV, MD, MG, MK,
             MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, TT,
             UA, UG
         RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
             IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML,
             MR, NE, SN, TD, TG
     US 5849482           A      19981215      US 1995-485611          19950607
     CA 2223584           AA     19961219      CA 1996-2223584         19960607
     AU 9661035           A1     19961230      AU 1996-61035           19960607
     AU 709924            B2     19990909
     EP 842186            A1     19980520      EP 1996-918350          19960607
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
     JP 11509528          T2     19990824      JP 1996-501849          19960607
PRIORITY APPLN. INFO.:                         US 1995-485611       A  19950607
                                               US 1988-250474       B2 19880928
                                               US 1989-353857       B1 19890518
                                               US 1991-748138       B1 19910821
                                               US 1993-11482        B2 19930126
                                               US 1993-49807        B1 19930420
                                               US 1994-178733       B2 19940107
                                               US 1994-226949       A2 19940627
                                               US 1994-334490       A  19941104
                                               WO 1996-US9551       W  19960607
```

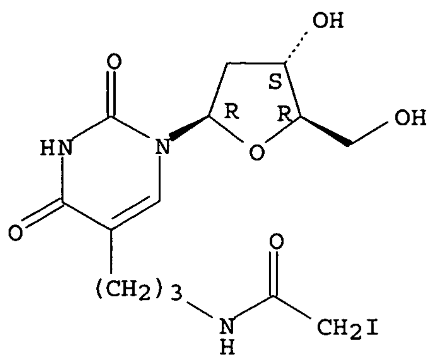
AB Oligonucleotide derivs. (ODNs) include a sequence that is complementary to a target sequence in single-stranded RNA, or single- or double-stranded DNA, and an alkylating function which after hybridization alkylates the target sequence. ODNs adapted for alkylating single-stranded RNA, such as mRNA, are complementary to the target sequence in the Watson Crick sense. ODNs adapted for alkylating double-stranded DNA have at least two alkylating functions and are complementary to the target sequence in the Hoogsteen or reverse Hoogsteen sense. With these ODNs both strands of the target sequence are alkylated. A third class of ODNs have at least approx. 26 nucleotide units in a continuous sequence which are complementary to the target sequence of double-stranded DNA, and the alkylating function is covalently attached to a nucleotide unit in the continuous sequence. Alkylation or crosslinking with this class of ODNs occurs in the presence of a recombinase enzyme.

IT **123265-52-1D**, oligonucleotide derivs. **186696-57-1D**, oligonucleotide derivs. **186696-58-2D**, oligonucleotide derivs. **186696-59-3D**, oligonucleotide derivs.
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); CAT (Catalyst use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy)

RN 123265-52-1 HCAPLUS

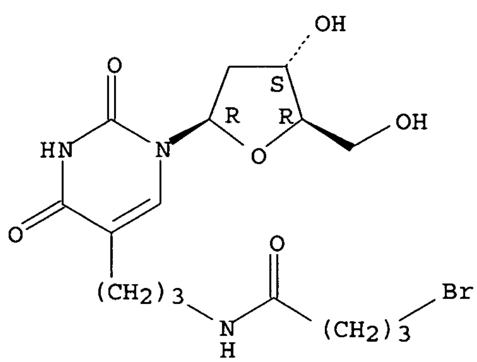
CN Uridine, 2'-deoxy-5-[3-[(iodoacetyl)amino]propyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



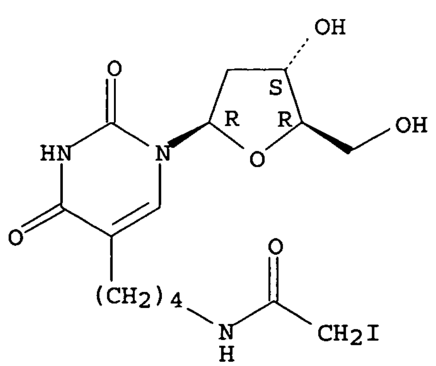
RN 186696-57-1 HCAPLUS
CN Uridine, 5-[3-[(4-bromo-1-oxobutyl)amino]propyl]-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



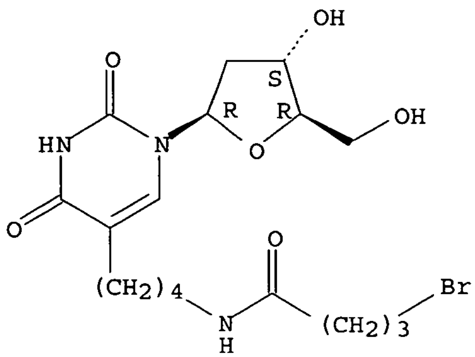
RN 186696-58-2 HCAPLUS
CN Uridine, 2'-deoxy-5-[4-[(iodoacetyl)amino]butyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



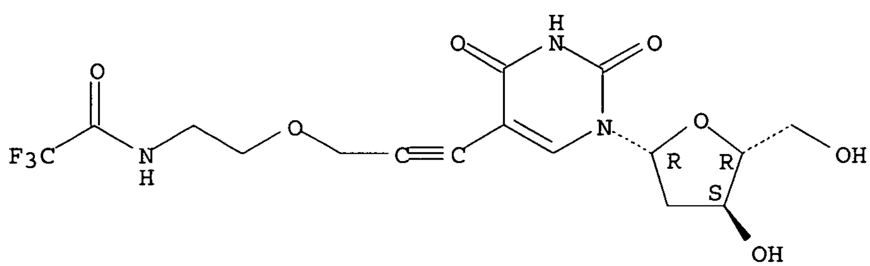
RN 186696-59-3 HCAPLUS
CN Uridine, 5-[4-[(4-bromo-1-oxobutyl)amino]butyl]-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



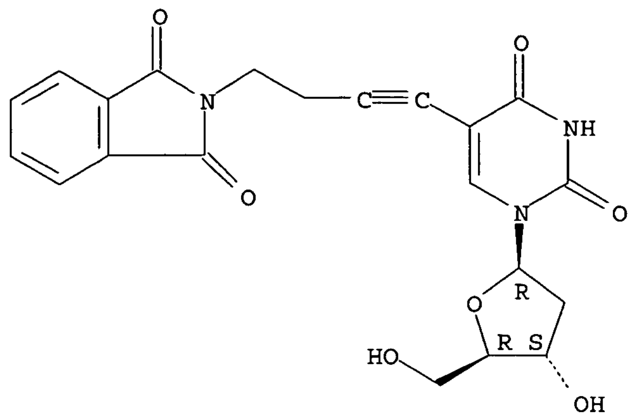
IT 161601-19-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction; oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy)
RN 161601-19-0 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 134140-85-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction; oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy)
RN 134140-85-5 HCAPLUS
CN Uridine, 2'-deoxy-5-[4-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

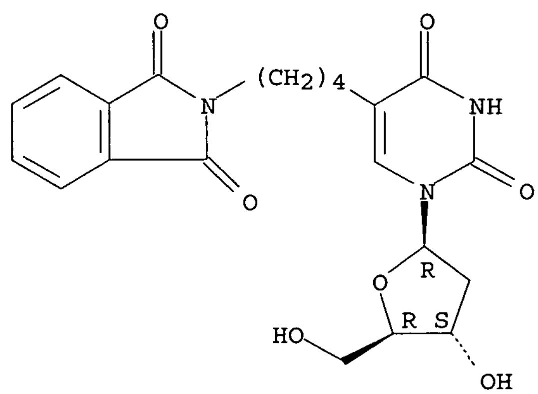


IT 134141-36-9P 161601-20-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation; oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy)

RN 134141-36-9 HCAPLUS

CN Uridine, 2'-deoxy-5-[4-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)butyl]- (9CI) (CA INDEX NAME)

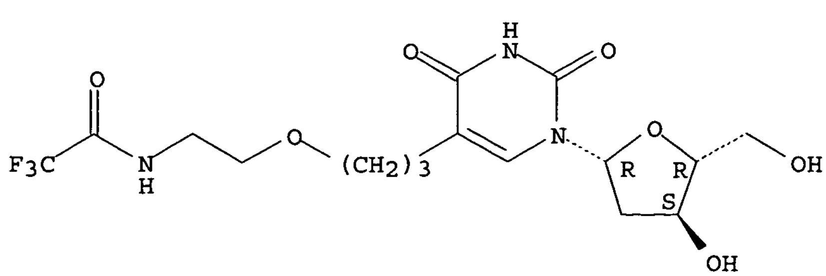
Absolute stereochemistry.



RN 161601-20-3 HCAPLUS

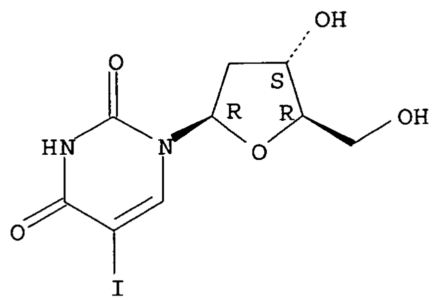
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]propyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **54-42-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with phthalimido-butyne or (trifluoroacetamidoethoxy)propyne; oligonucleotide derivs. preparation for target nucleic acid alkylation and crosslinking, gene mapping, and gene therapy)
RN 54-42-2 HCAPLUS
CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L43 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:422616 HCAPLUS
DOCUMENT NUMBER: 122:178406
TITLE: Bifunctional crosslinking oligonucleotides adapted for linking to a desired gene sequence of invading organism or cell
INVENTOR(S): Meyer, Rich B., Jr.; **Gall, Alexander A.**; Gamper, Howard B.; Kutyavin, Igor V.
PATENT ASSIGNEE(S): Microprobe Corp., USA
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 8
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9417092	A1	19940804	WO 1994-US791		19940125
W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, HU, JP, KP, KR, KZ, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
AU 9462962	A1	19940815	AU 1994-62962		19940125
PRIORITY APPLN. INFO.:			US 1993-11482	A	19930126
			WO 1994-US791	W	19940125

OTHER SOURCE(S): CASREACT 122:178406
AB Chemical modified oligonucleotides (ODNs) are complementary, either in the sense of the classic "four letter code" recognition motif, or in the sense required for triple strand formation based on the more limited "two letter code recognition motif", to a target sequence of double stranded DNA of an invading cell, organism or pathogen, such as a virus, fungus, parasite, bacterium or malignant cell. The ODNs have crosslinking agents covalently attached at least to two different sites of the ODN. Alternatively, the crosslinking agent which is attached to one site on the ODN has two

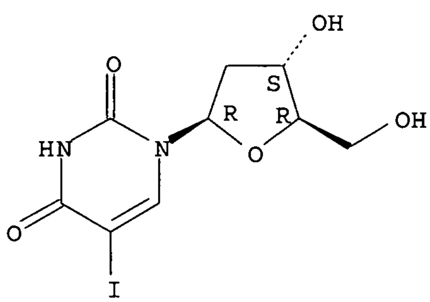
crosslinking functionalities, and therefore in effect comprises two crosslinking agents. The crosslinking agent typically includes a linker arm (such as an alkyl, alkoxy, aminoalkyl or amidoalkyl chain) and a reactive group which, after triple strand formation with the target sequence of DNA, is capable of reacting with the target DNA to form a covalent bond therewith. Each crosslinking agent of the novel modified therapeutic ODNs is capable of forming a covalent bond with the target DNA. As a result of the covalent bond formation between the modified therapeutic ODN and both strands of the target DNA sequence, replication and expression of the target DNA sequence is inhibited. Oligonucleotides containing one or two terminal [bis(2-chloroethyl)amino]phenylbutyrate groups attached to the 5 position of uridine or to the phosphate group by a linker were prepared and their ability to crosslink target duplex DNA demonstrated.

IT **54-42-2**, 5-Iodo-2'-deoxyuridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of bifunctional crosslinking oligonucleotides for inhibition of gene expression)

RN 54-42-2 HCAPLUS

CN Uridine, 2'-deoxy-5-iodo- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

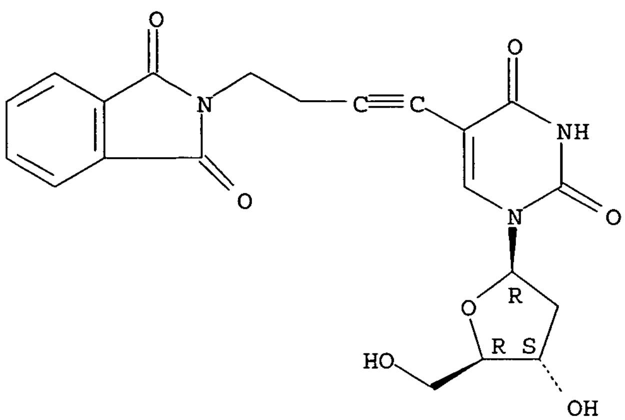


IT **134140-85-5P** **134141-36-9P** **161601-19-0P**
161601-20-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of bifunctional crosslinking oligonucleotides for inhibition of gene expression)

RN 134140-85-5 HCAPLUS

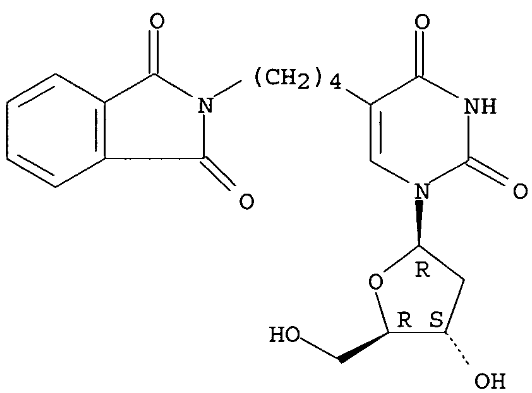
CN Uridine, 2'-deoxy-5-[4-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-1-butynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



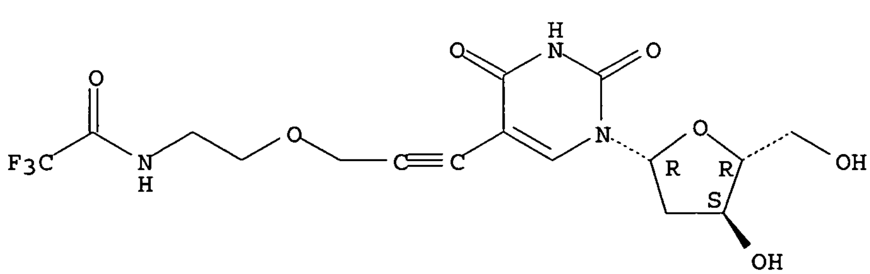
RN 134141-36-9 HCAPLUS
CN Uridine, 2'-deoxy-5-[4-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)butyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



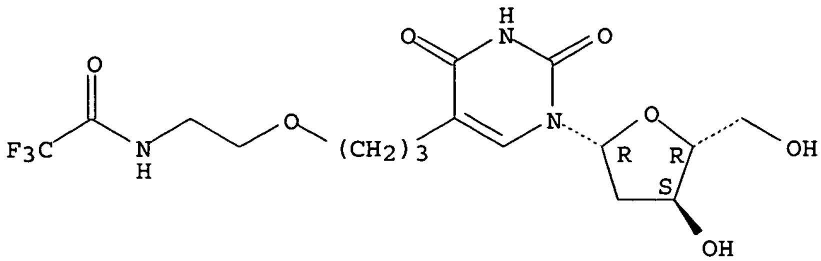
RN 161601-19-0 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]-1-propynyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 161601-20-3 HCAPLUS
CN Uridine, 2'-deoxy-5-[3-[2-[(trifluoroacetyl)amino]ethoxy]propyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L43 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:627655 HCAPLUS
DOCUMENT NUMBER: 115:227655
TITLE: Modification of nucleic acids by reactive derivatives of oligonucleotides carrying a 5'-end nitrogenous linker residue of various sizes.
AUTHOR(S): Bulychev, N. V.; Vorob'ev, Yu. N.; **Gall, A. A.**; Koshkin, A. A.; Shishkin, G. V.
CORPORATE SOURCE: Inst. Bioorg. Chem., Novosibirsk, USSR
SOURCE: Bioorganicheskaya Khimiya (1991), 17(6), 795-805
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB By optimizing the length of a linker bearing 5'-terminal alkylating 4-[methyl-(2-chloroethyl)amino]benzylphosphoramide residue, a reactive oligodeoxyribonucleotide derivative has been constructed with an optimal ability to alkylate nucleic bases in a double-stranded region of the complementary complex between a target NA and the addressed oligonucleotide. A such oligonucleotide could be useful for modifying the target NA if the nucleophilic sites of its single-stranded 3'-terminal region are protected due to a specific tertiary structure. A mol. mech. modeling suggested that the insertion of two addnl. methylene groups into the standard linker provides an optimal increase in the efficiency of the modification of the base sites exposed into the major groove of the complementary complex. Synthesis of an oligonucleotide derivative with the modified linker and expts. on the target alkylation showed a 2-3 fold increase of the modifying ability as compared with the reagent having the standard linker. The conformational dynamics of the reactive group is discussed.

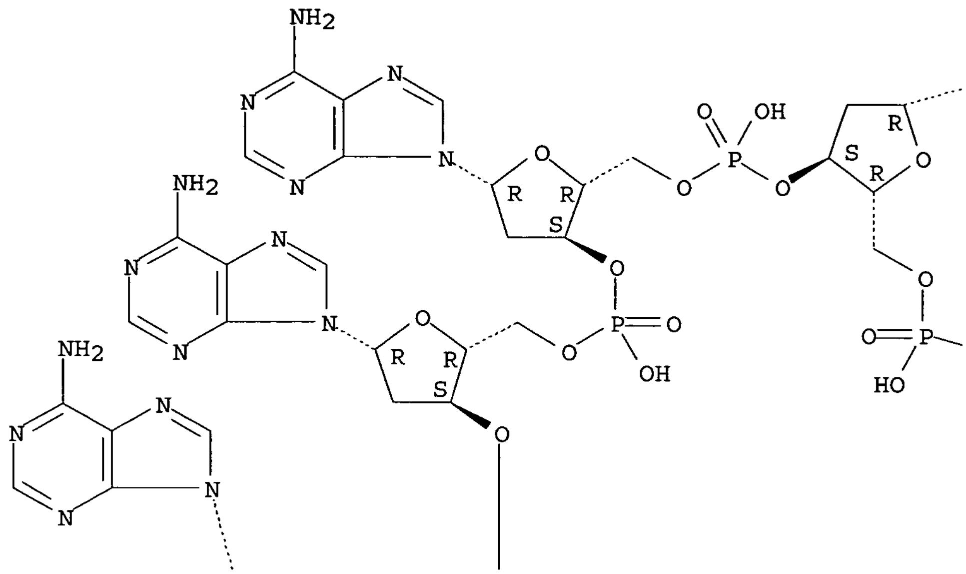
IT **136684-14-5 136684-15-6 136710-16-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of)

RN 136684-14-5 HCAPLUS

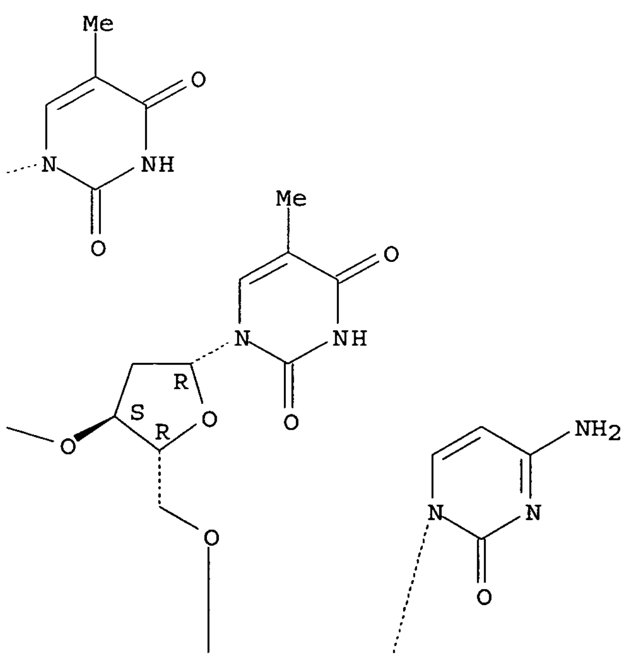
CN Adenosine, 2'-deoxy-5'-O-phosphonocytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

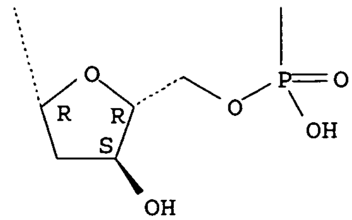
PAGE 1-A



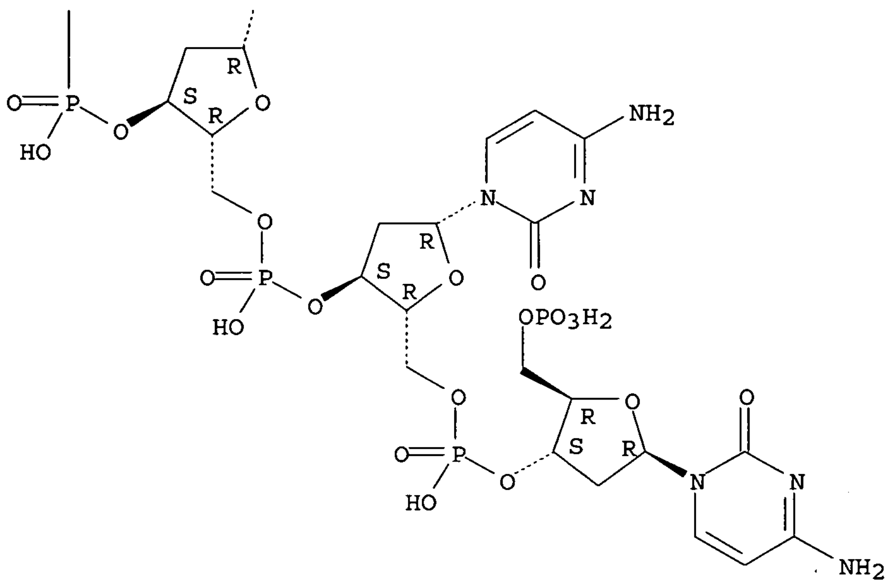
PAGE 1-B



PAGE 2-A



PAGE 2-B

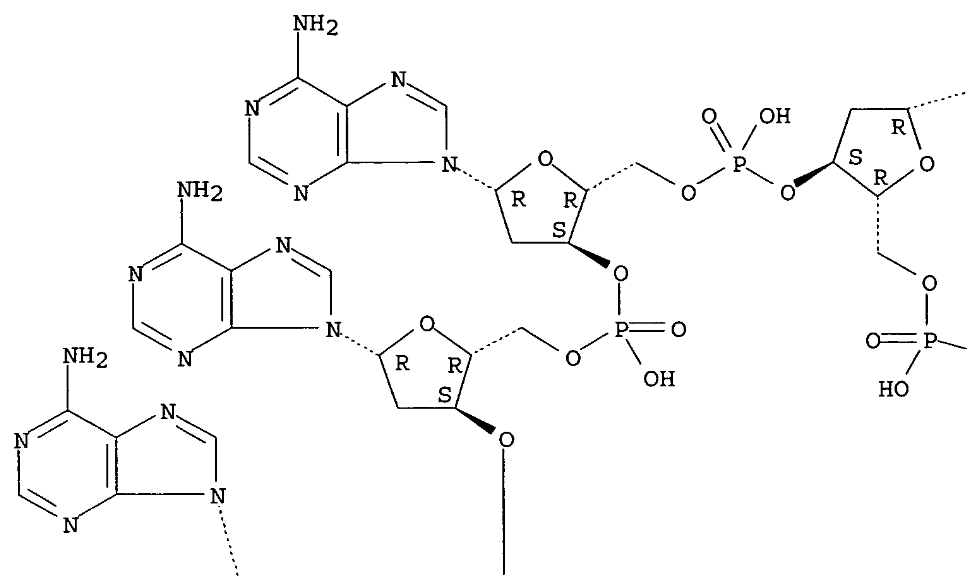


RN 136684-15-6 HCAPLUS

CN 5'-Thymidylic acid, 2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-thymidylyl-(5'→3')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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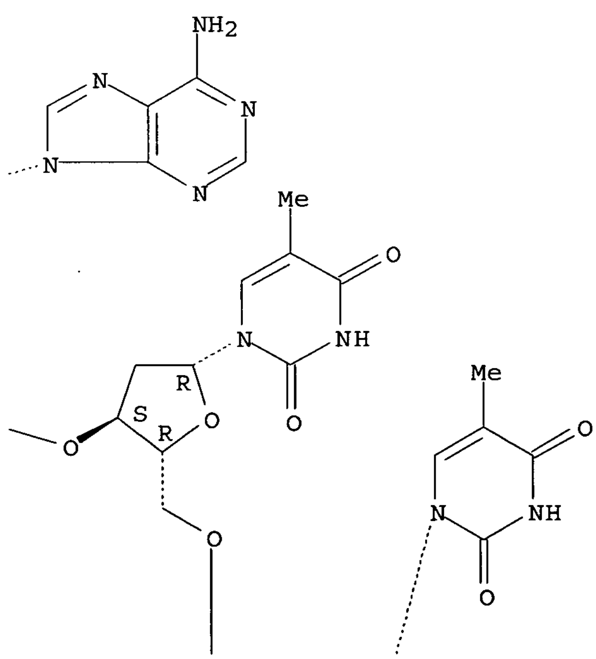
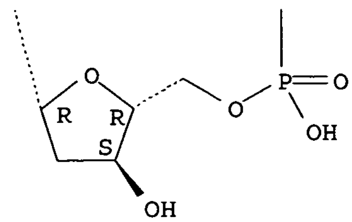
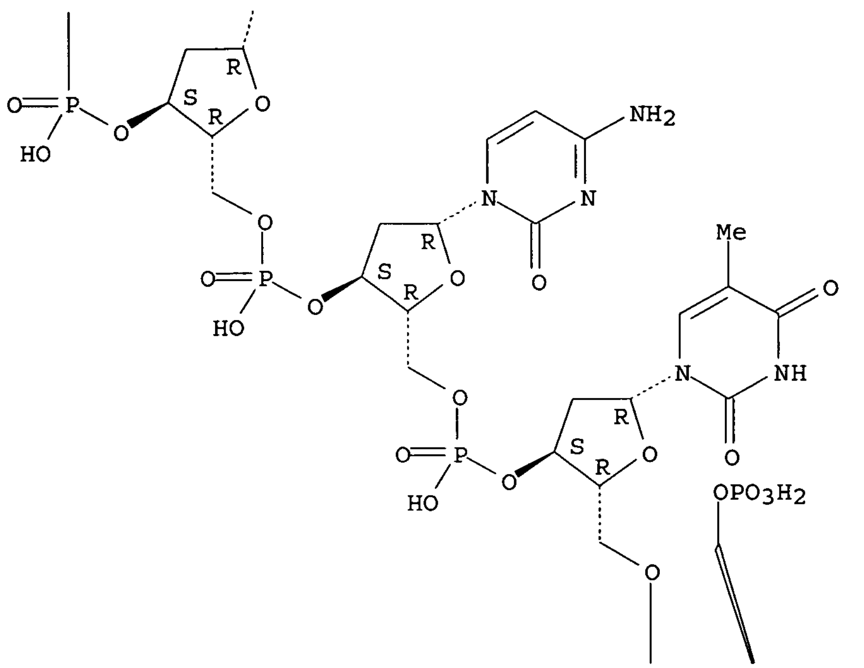


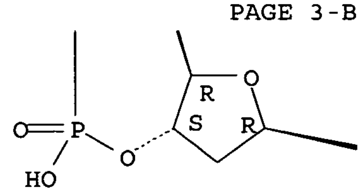
PAGE 2-A



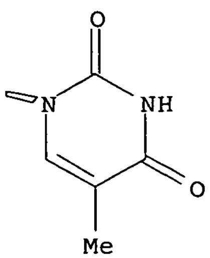
PAGE 2-B



PAGE 3-B



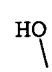
PAGE 3-C



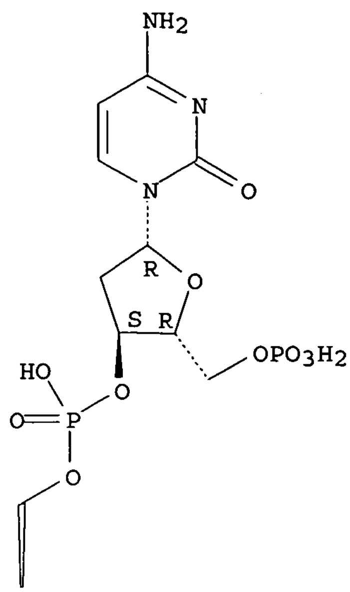
RN 136710-16-2 HCAPLUS
CN 5'-Cytidylic acid, 2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-B



PAGE 1-C



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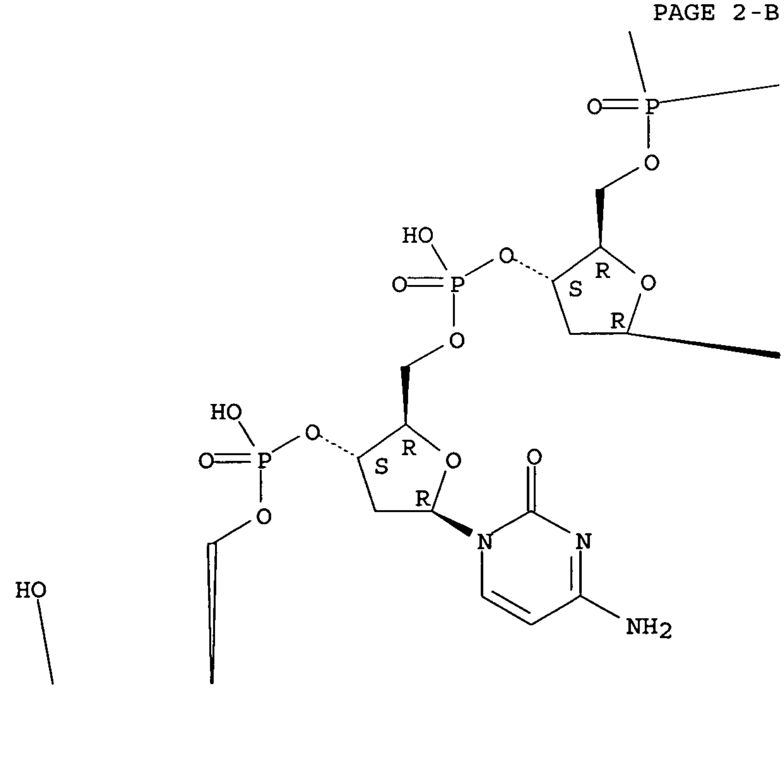

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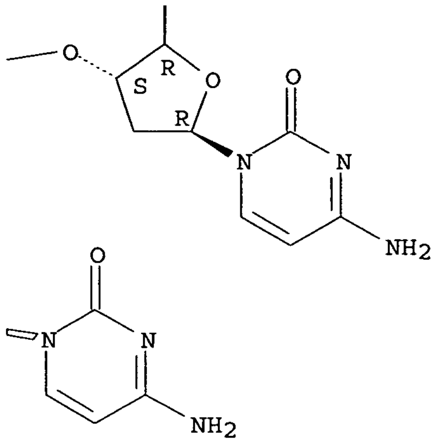
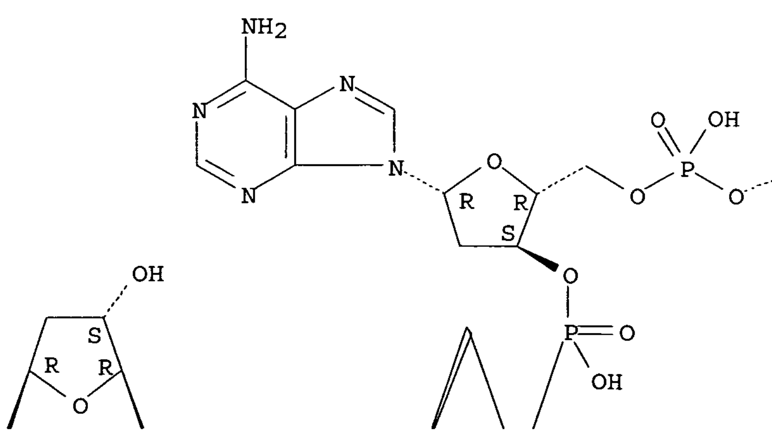
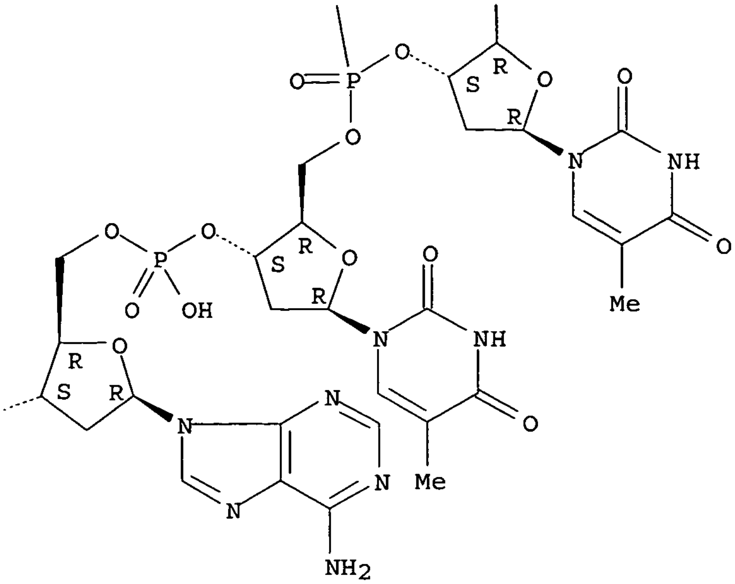


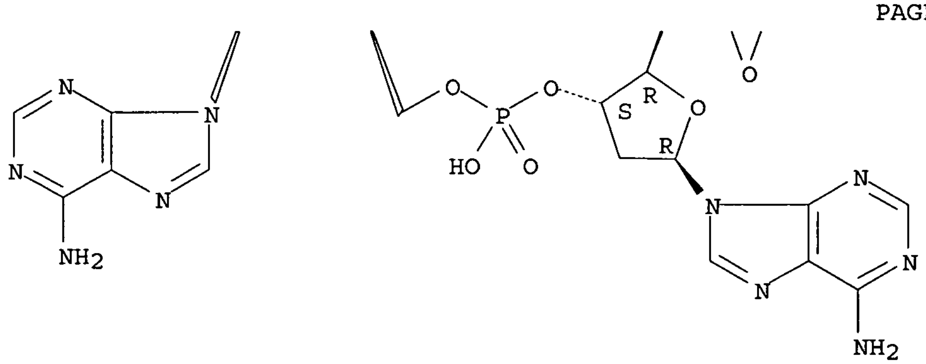
PAGE 3-A



PAGE 3-B



PAGE 4-A



IT 136684-32-7 136684-35-0 137067-09-5
137067-11-9
RL: ANST (Analytical study)
(as alkylation models, oligonucleotides carrying nitrogenous linkers of various sizes for modification of)

RN 136684-32-7 HCAPLUS

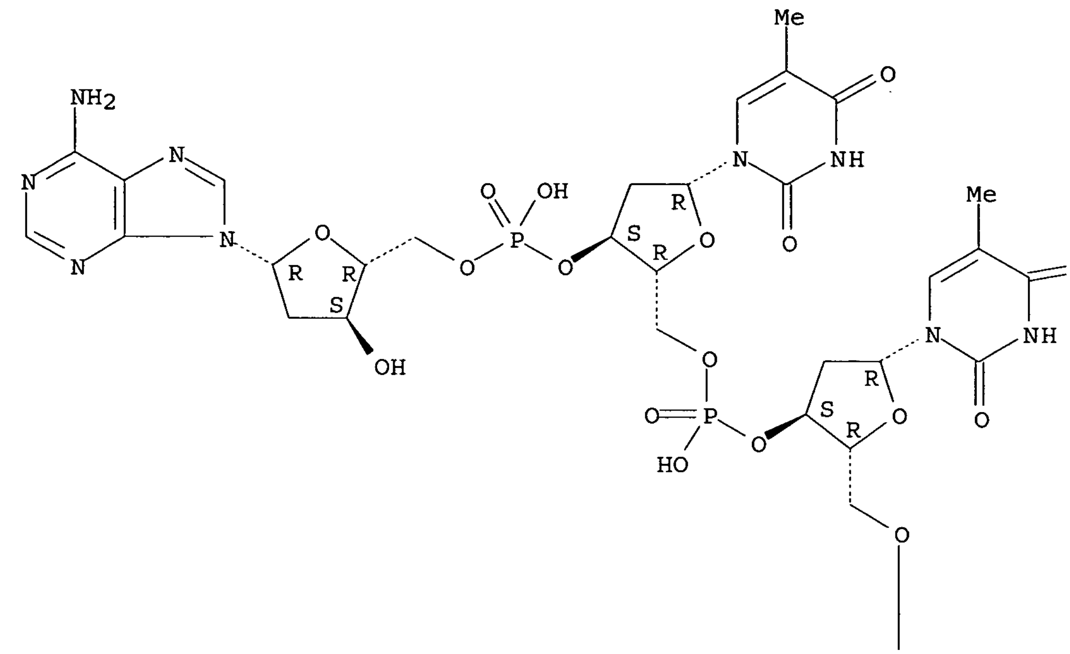
CN Adenosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxy-, complex with thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidine (1:1) (9CI) (CA INDEX NAME)

CM 1

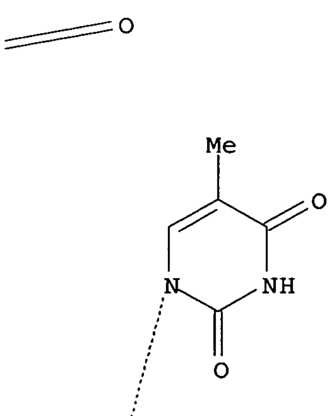
CRN 261354-29-4
CMF C67 H88 N20 O42 P6

Absolute stereochemistry.

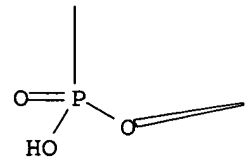
PAGE 1-A



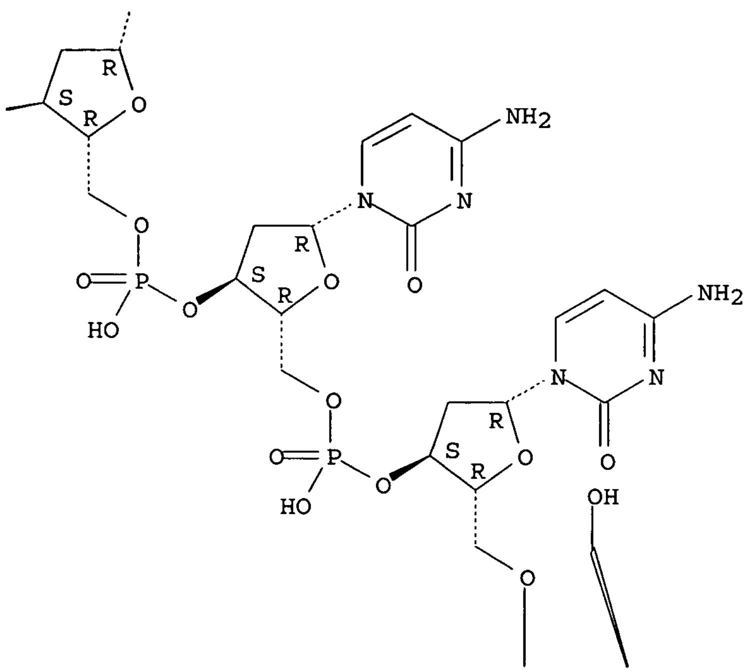
PAGE 1-B



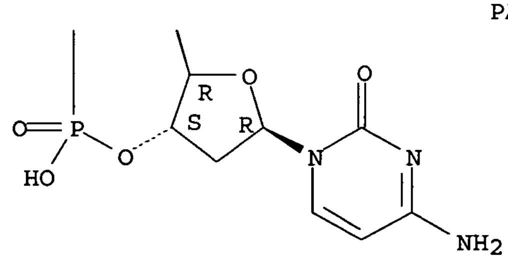
PAGE 2-A



PAGE 2-B



PAGE 3-B

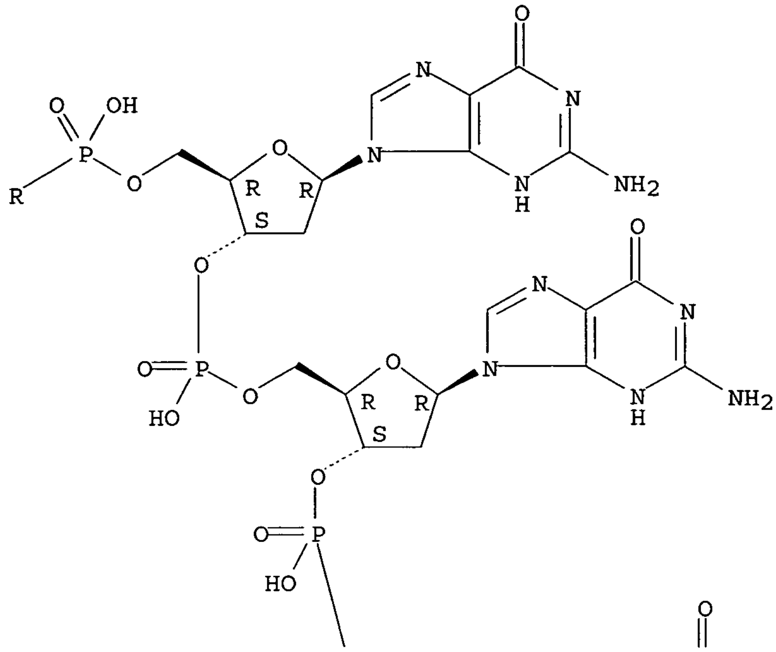


CM 2

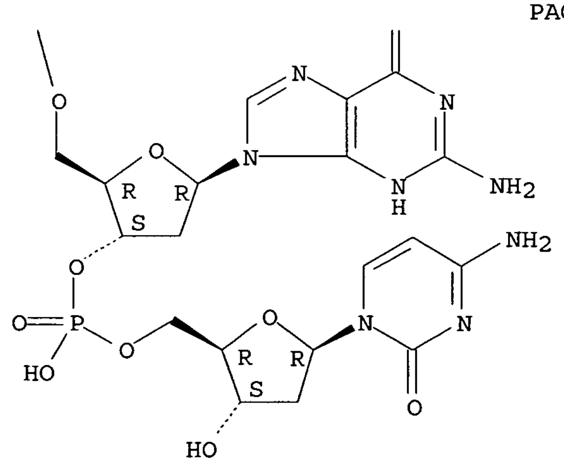
CRN 136684-30-5
CMF C79 H98 N35 O44 P7

Absolute stereochemistry.

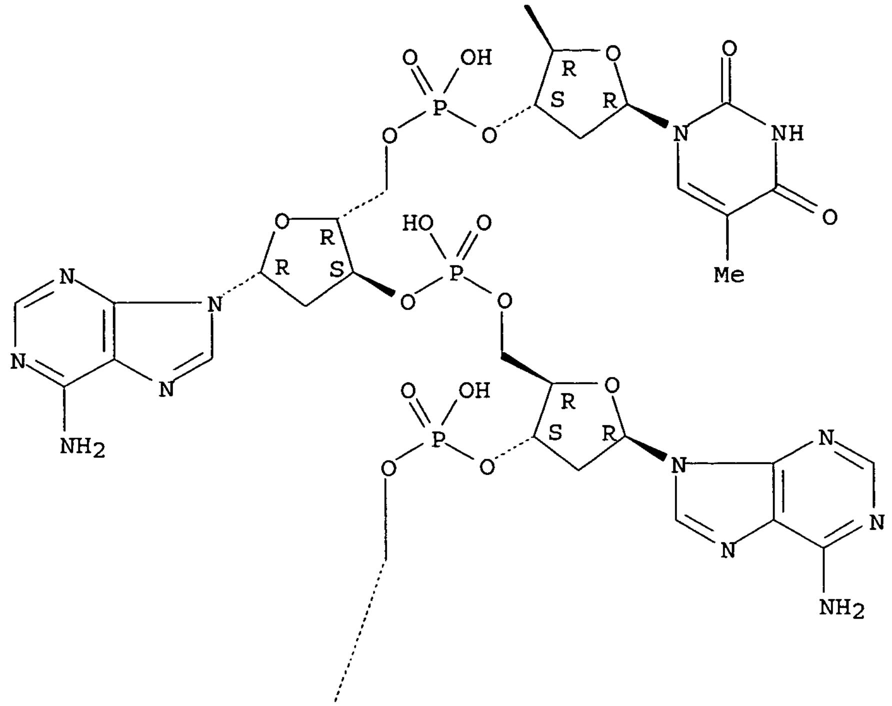
PAGE 1-A



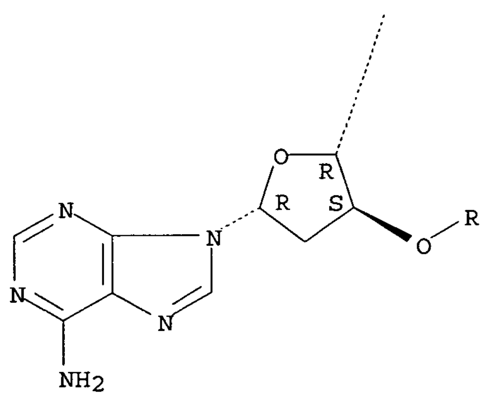
PAGE 2-A



PAGE 3-A



PAGE 4-A



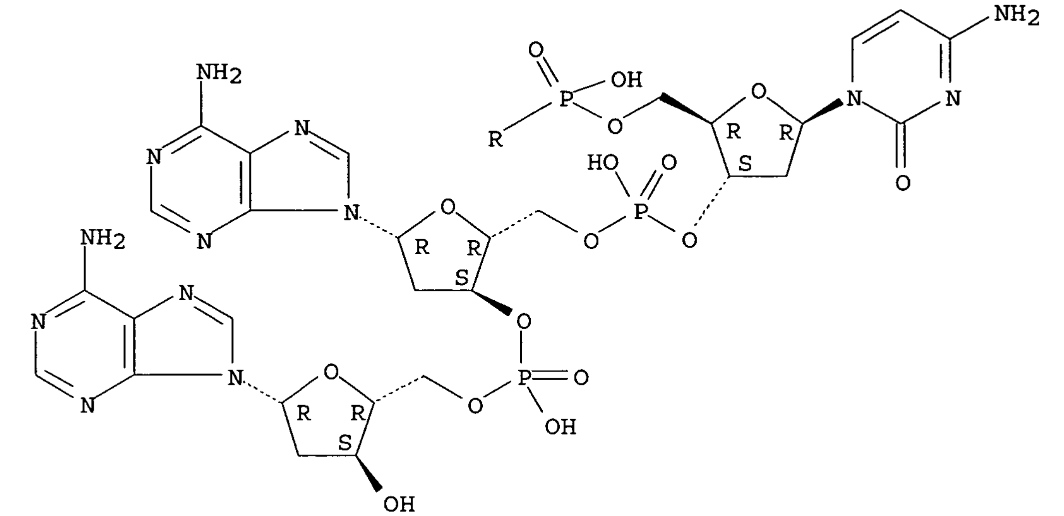
RN 136684-35-0 HCAPLUS
CN Adenosine, 2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy-, complex with 2'-deoxycytidylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-thymidine (1:1) (9CI) (CA INDEX NAME)

CM 1

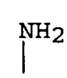
CRN 136684-34-9
CMF C89 H111 N37 O48 P8

Absolute stereochemistry.

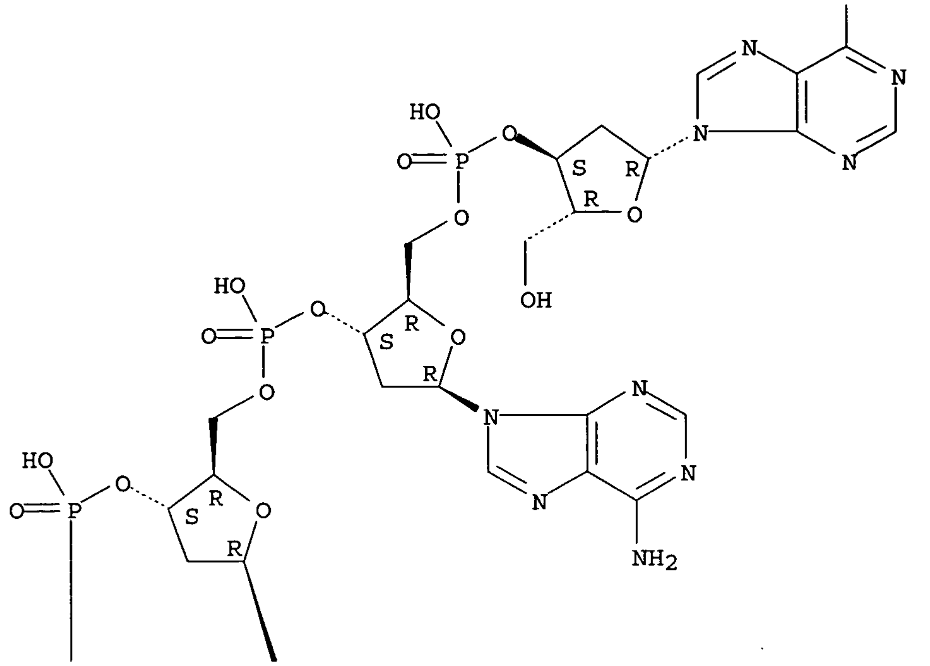
PAGE 1-A



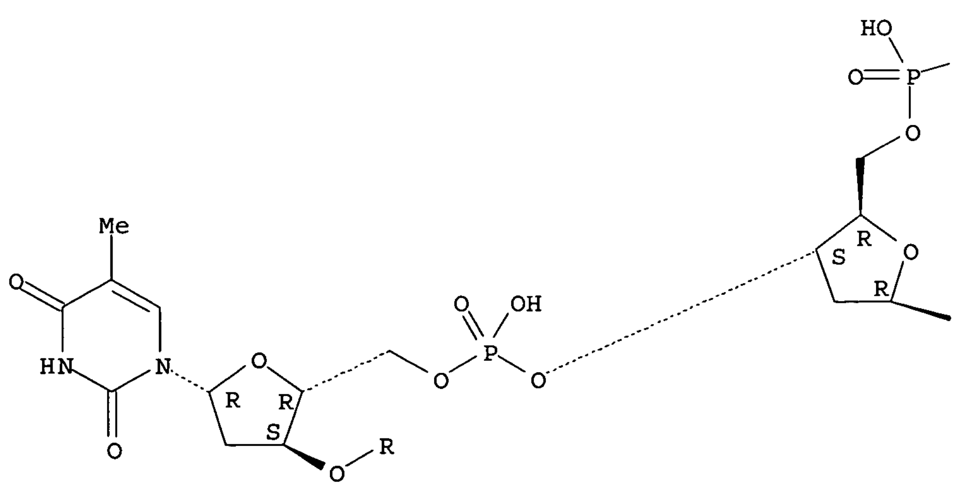
PAGE 1-B



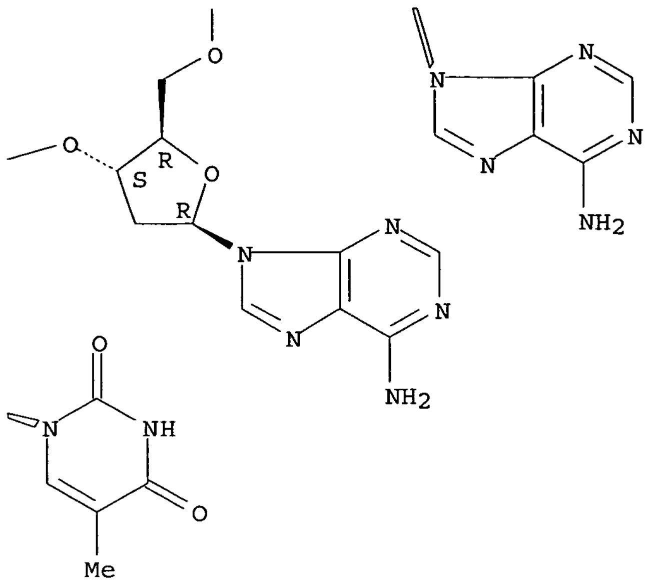
PAGE 2-B



PAGE 3-A



PAGE 3-B

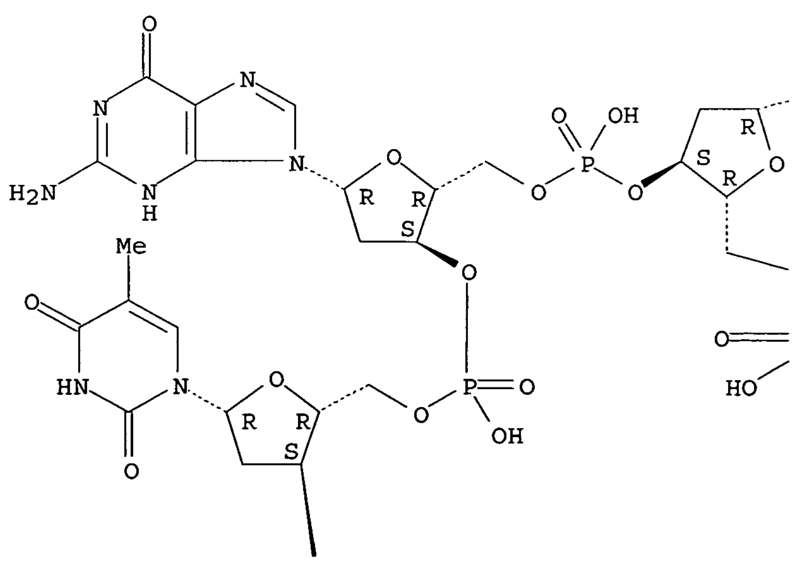


CM 2

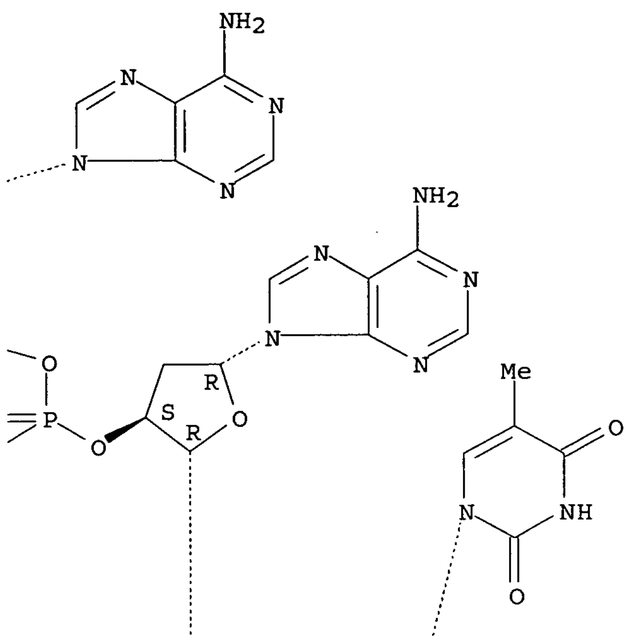
CRN 136684-33-8
CMF C99 H127 N30 O62 P9

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



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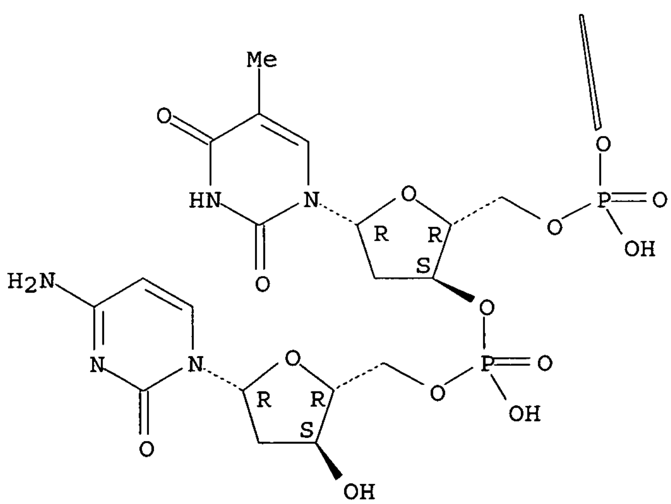
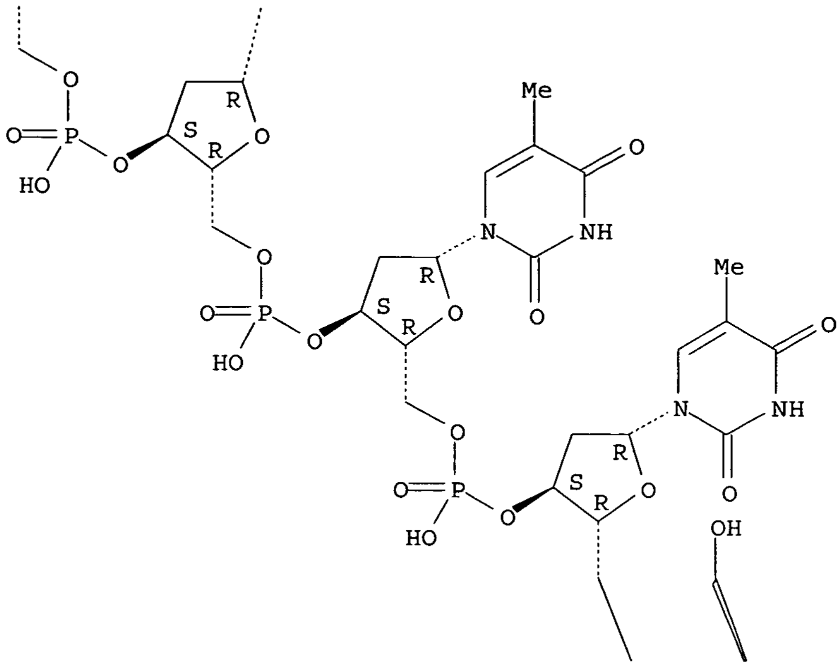
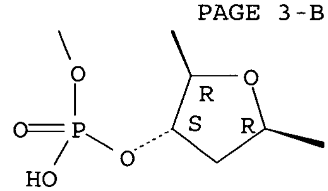


PAGE 2-B



PAGE 3-B



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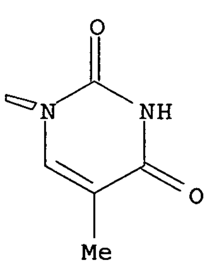

RN 137067-09-5 HCAPLUS
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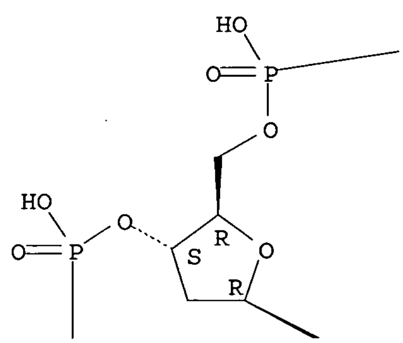
(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxycytidylyl-
(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyguanylyl-
(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyguanylyl-
(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-
(5'→3')-thymidylyl-(5'→3')-thymidylyl-(5'→3')-
thymidylyl-(5'→3')-thymidine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137067-08-4
CMF C96 H123 N36 O56 P9

Absolute stereochemistry.

PAGE 1-B



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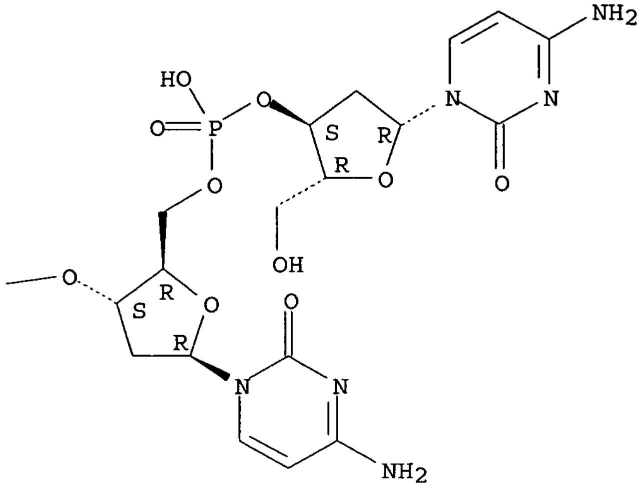
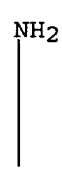
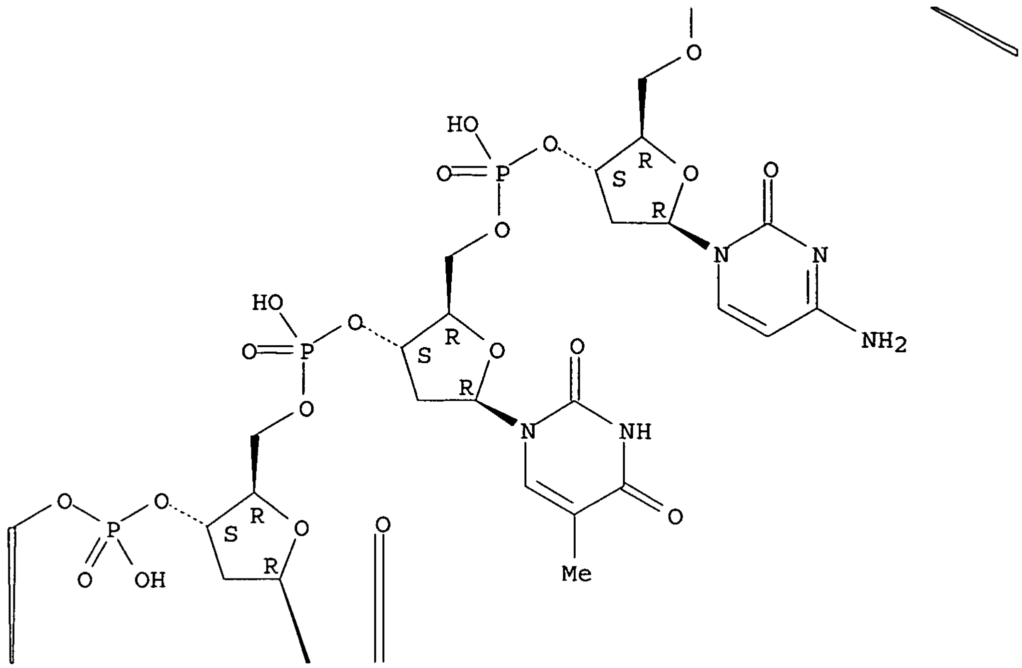


PAGE 2-A



PAGE 2-B



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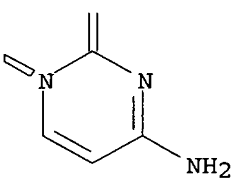
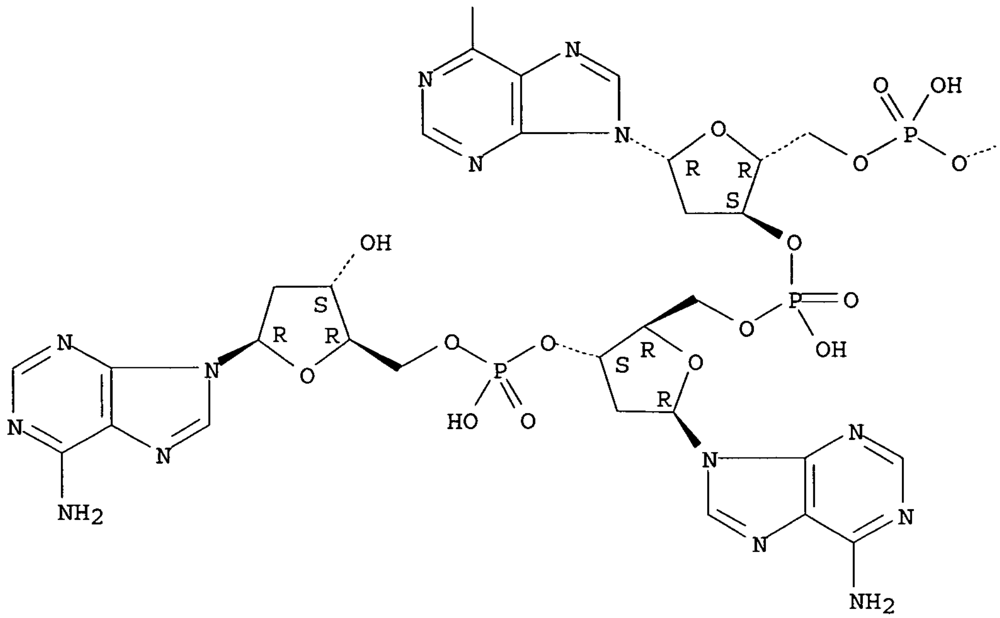
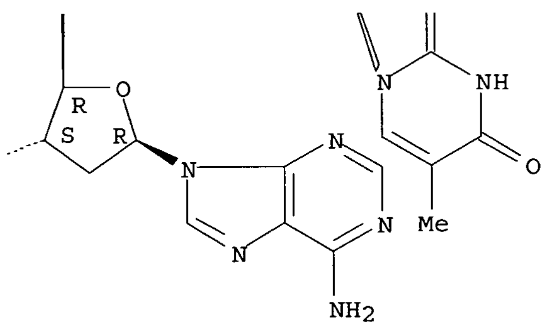


PAGE 3-A



PAGE 3-B



CM 2

CRN 136697-09-1
CMF C127 H161 N47 O78 P12
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 137067-11-9 HCAPLUS
CN Adenosine, 2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxy-, complex with 2'-deoxycytidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxycytidylyl-(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyguanylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-2'-deoxyadenylyl-(5'→3')-thymidylyl-(5'→3')-thymidylyl-

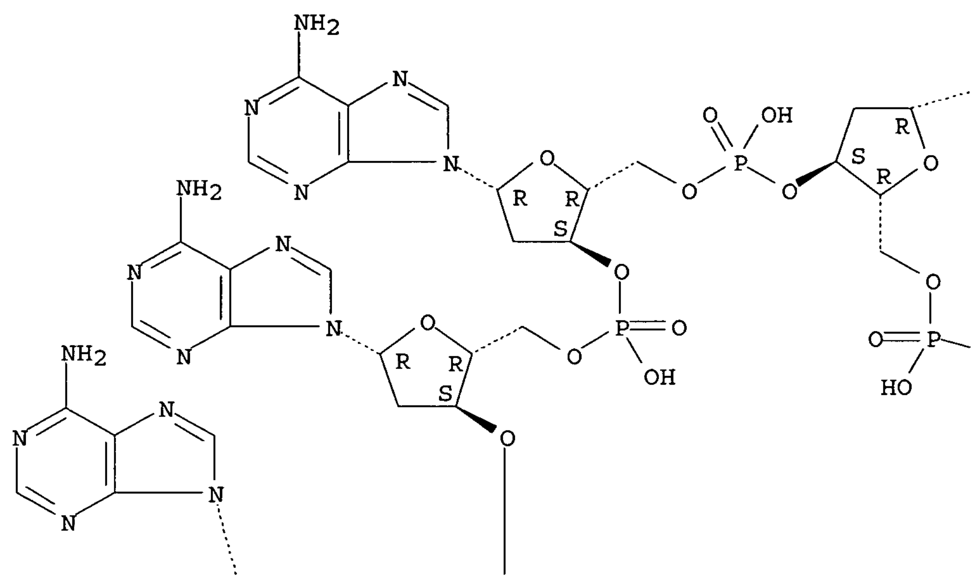
(5'→3')-thymidylyl-(5'→3')-thymidine (1:1) (9CI) (CA INDEX NAME)

CM 1

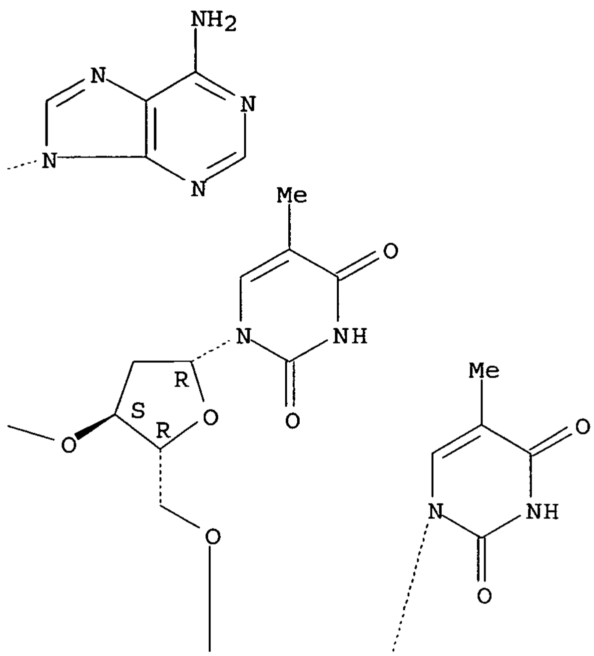
CRN 137067-10-8
CMF C87 H111 N33 O50 P8

Absolute stereochemistry.

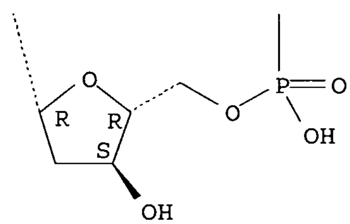
PAGE 1-A



PAGE 1-B



PAGE 2-A



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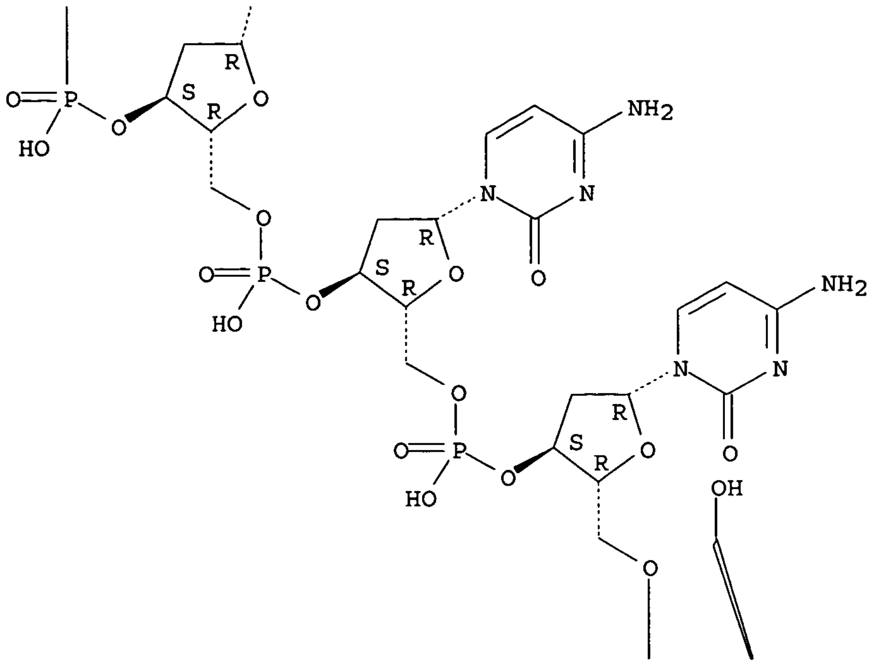
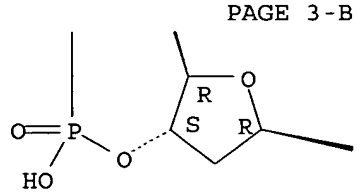
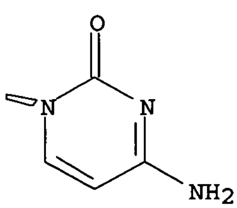


PAGE 3-B



PAGE 3-C



CM 2

CRN 136697-09-1
CMF C127 H161 N47 O78 P12
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L43 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:204228 HCAPLUS

DOCUMENT NUMBER: 102:204228

TITLE: Complementary addressed modification of oligonucleotides and polynucleotides with reactive derivatives of oligonucleotides prepared by derivatization with new heterobifunctional reagents

AUTHOR(S): Vlassov, V. V.; **Gall, A. A.**; Godovikov, A. A.; Zarytova, V. F.; Kazakov, S. A.; Kutyavin, I. V.; Shishkin, G. V.; Mamaev, S. V.

CORPORATE SOURCE: Inst. Org. Chem., Novosibirsk, USSR

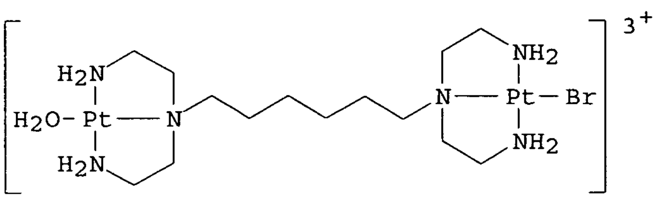
SOURCE: Quaderni de La Ricerca Scientifica (1984), 113(Macromol. Funct. Cell), 71-9

CODEN: QRSCAJ; ISSN: 0556-9664

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



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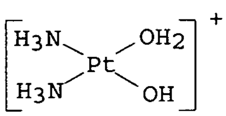
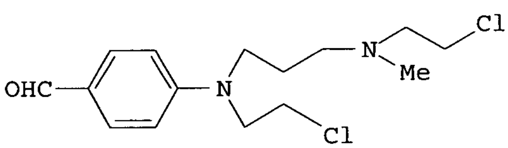


II



III

AB Nucleophilic centers of oligonucleotides react with heterobifunctional reagents I, II, or III to give oligonucleotide derivs. carrying a 2nd reactive function of the heterobifunctional reagent. The reactive oligonucleotide derivs. thus obtained can be used for complementary addressed modification of nucleic acids.

IT **88378-64-7**

RL: PROC (Process)

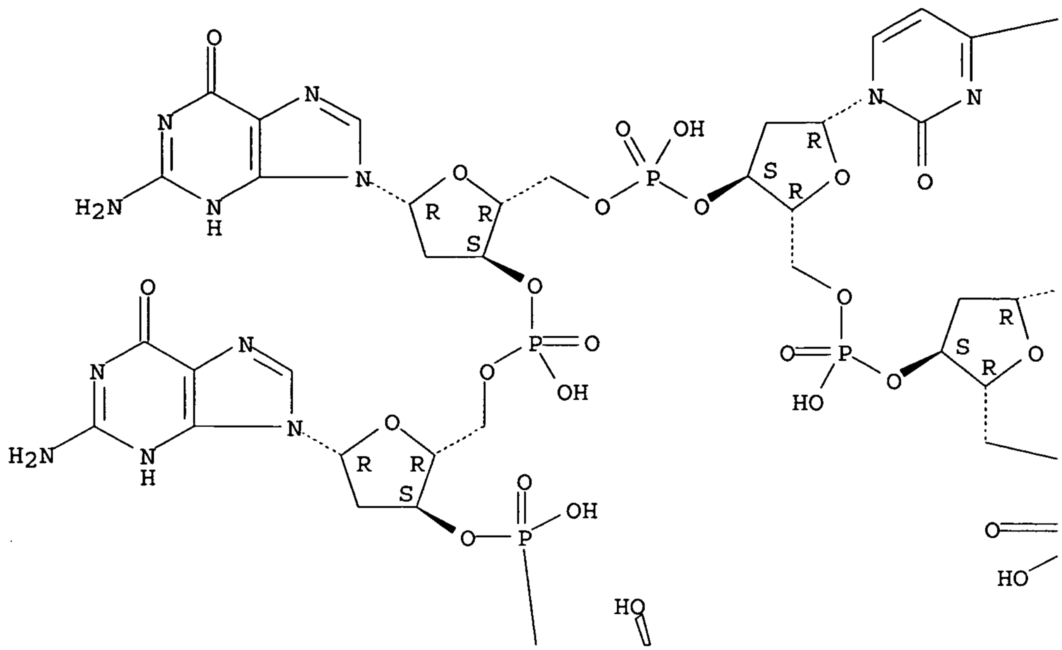
(complementary addressed modification of, with platinum oligonucleotide derivative)

RN 88378-64-7 HCAPLUS

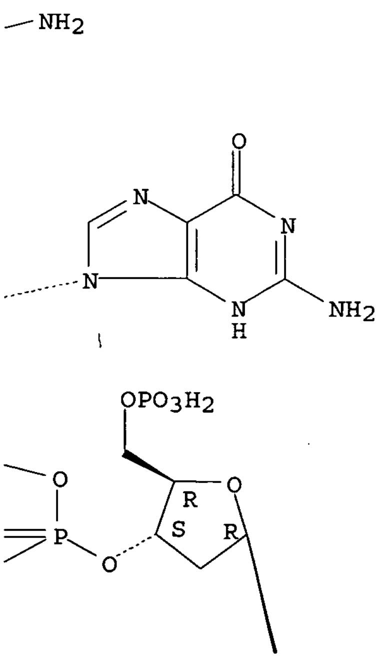
CN Adenosine, 2'-deoxy-5'-O-phosphonoguanylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

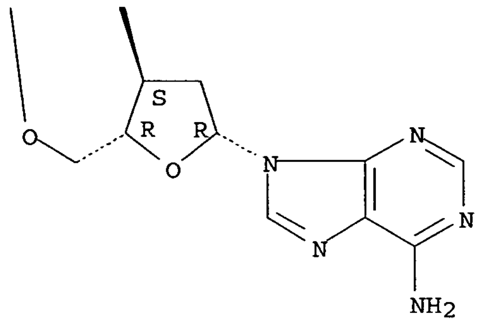
PAGE 1-A



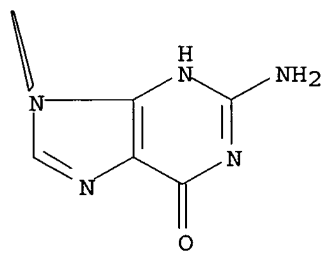
PAGE 1-B



PAGE 2-A



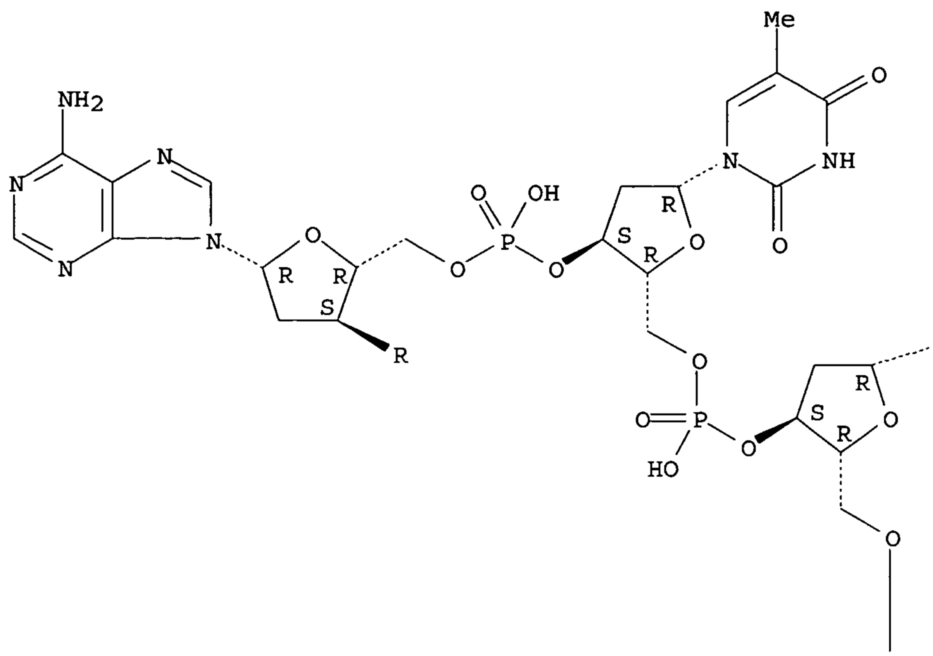
PAGE 2-B



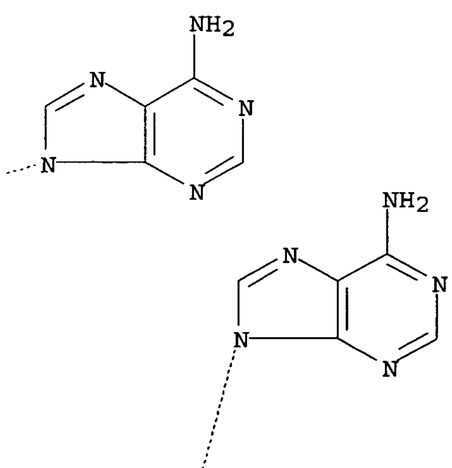
IT **96287-71-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bifunctional alkylating reagent, complementary addressed modification in relation to)
RN 96287-71-7 HCAPLUS
CN Adenosine, thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-, 3'-(dihydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

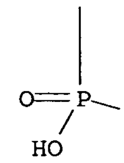
PAGE 1-A



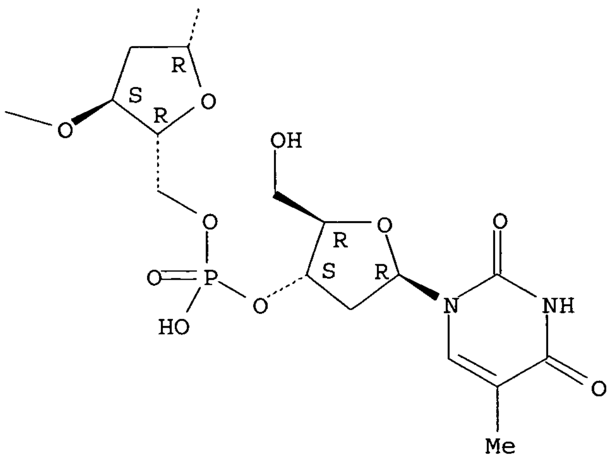
PAGE 1-B



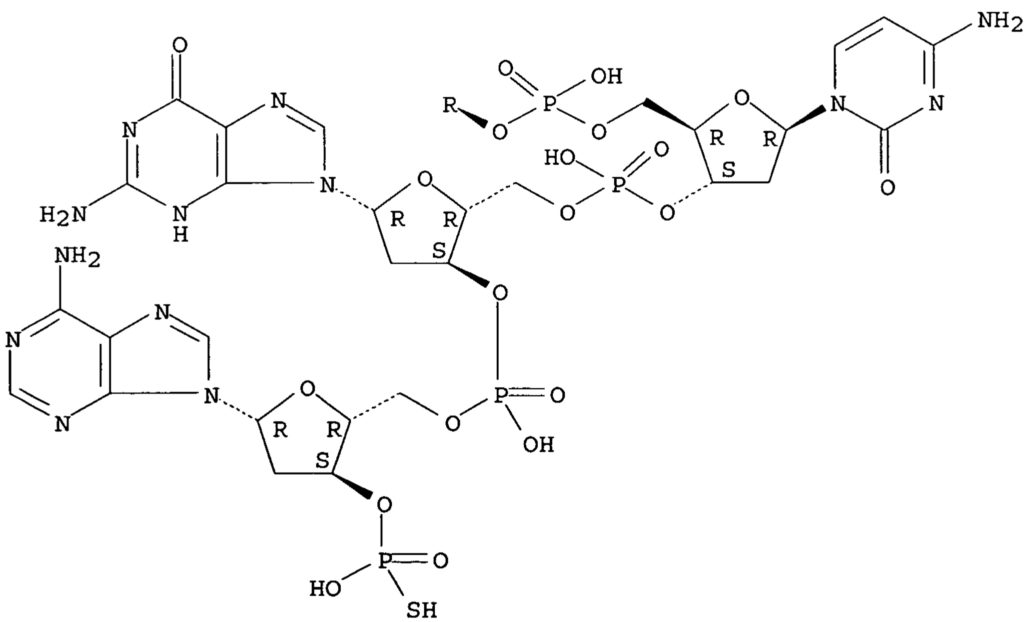
PAGE 2-A



PAGE 2-B



PAGE 3-A

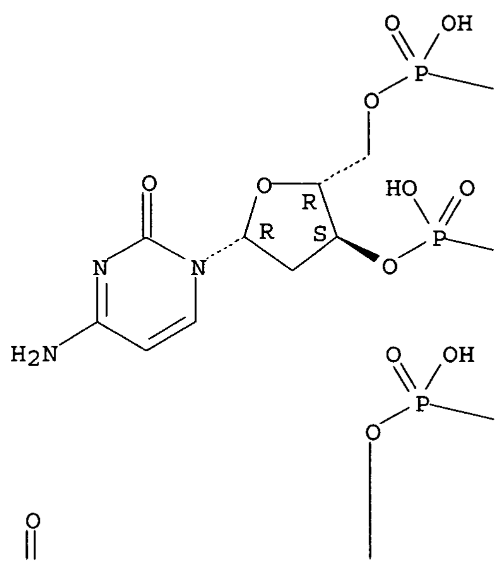


IT 88378-63-6
RL: RCT (Reactant); RACT (Reactant or reagent)

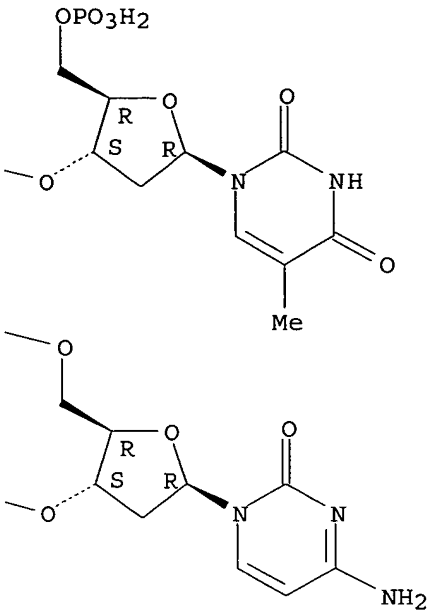
(reaction of, with bifunctional platinum reagent, complementary addressed modification in relation to)
RN 88378-63-6 HCAPLUS
CN DNA, d(T-C-C-G-C-C-T-T-T), 5'-(dihydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

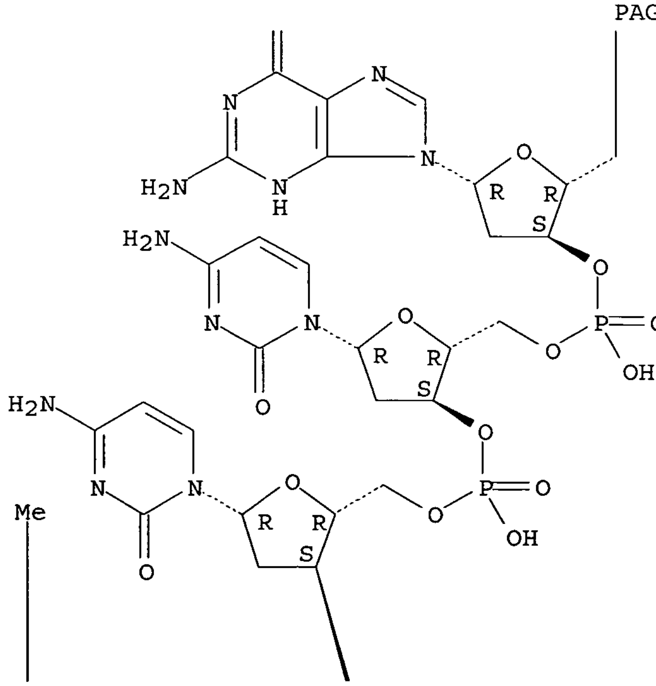
PAGE 1-A



PAGE 1-B



PAGE 2-A



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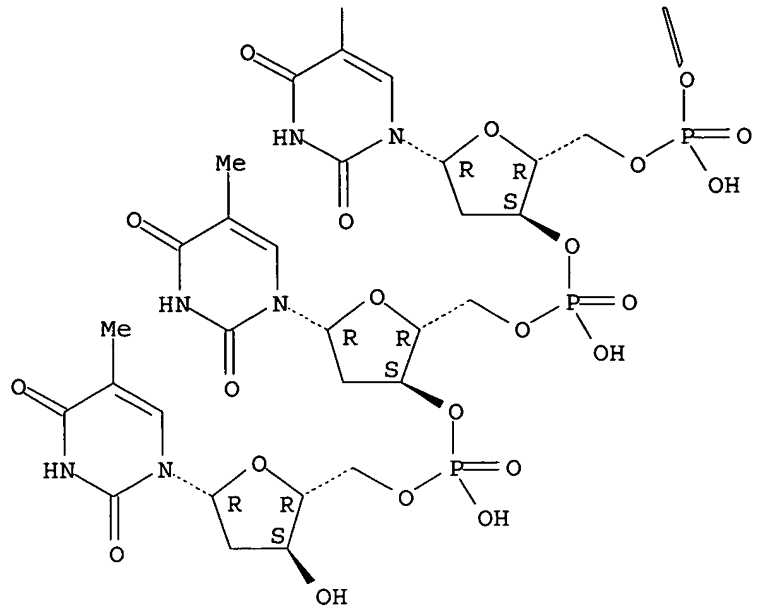
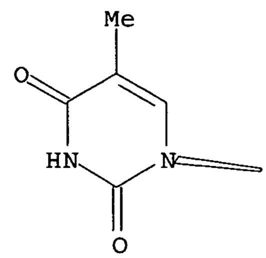
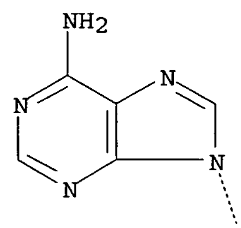


L43 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:571636 HCAPLUS
DOCUMENT NUMBER: 101:171636
TITLE: Complementarily addressed modification of a synthetic deoxyribooligonucleotide by an oligonucleotide derivative carrying an alkylating reagent at the 3'-terminal thiophosphate group
AUTHOR(S): Vlasov, V. V.; **Gall, A. A.**; Godovikov, A. A.; Zarytova, V. F.
CORPORATE SOURCE: Inst. Org. Khim., Novosibirsk, USSR
SOURCE: Doklady Akademii Nauk SSSR (1984), 274(5), 1244-7 [Biochem.]
CODEN: DANKAS; ISSN: 0002-3264
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Treating pTAATACGAps (ps = thiophosphate group) with ClCH2CH2NMe(CH2)3N(CH2CH2Cl)C6H4CHO-p gave pTAATACGAps-CH2CH2NMe(CH2)3N(CH2CH2Cl)C6H4CHO-p which was reduced by NaBH4 to give pTAATACGAps-CH2CH2NMe(CH2)3N(CH2CH2Cl)C6H4CH2OH-p which is a useful reagent for complementary modification of synthetic deoxyribonucleotides.
IT **92584-32-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
RN 92584-32-2 HCAPLUS
CN Adenosine, 5'-O-phosphonothymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-, 3'-[S-[2-[[3-[(2-chloroethyl)(4-formylphenyl)amino]propyl]methylamino]ethyl] hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

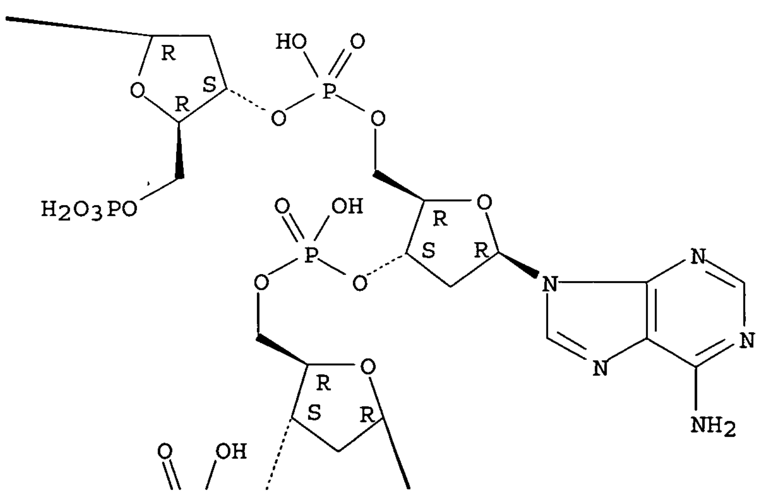
Absolute stereochemistry.

PAGE 1-A

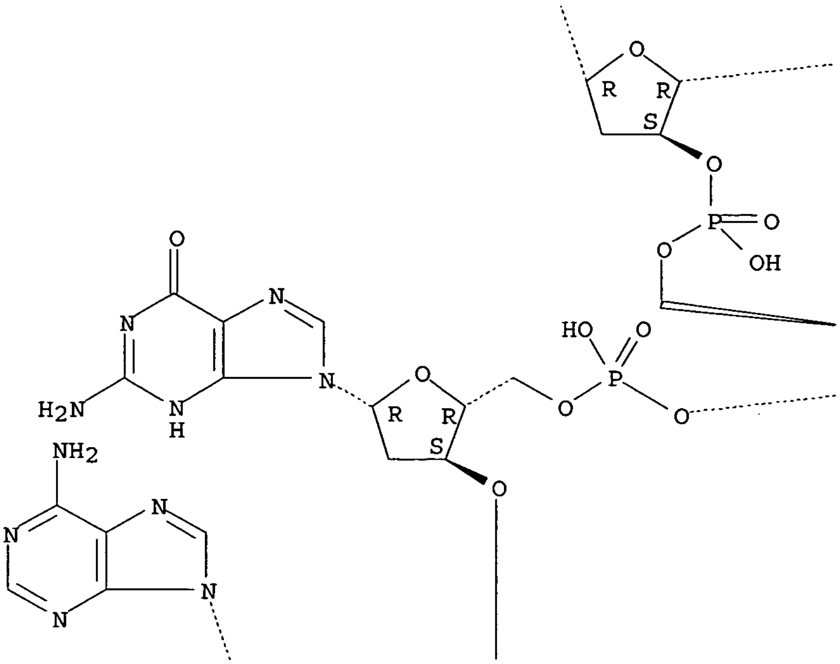




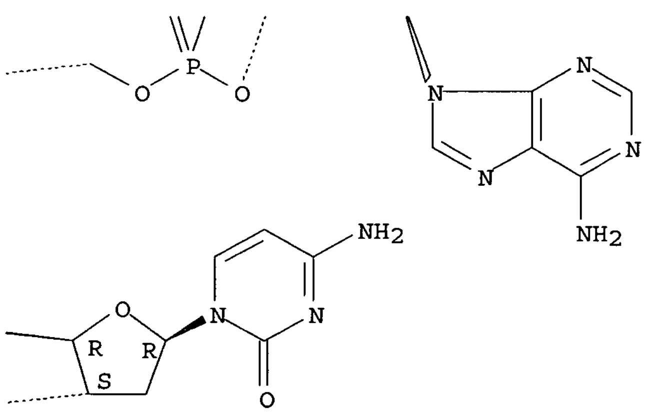
PAGE 1-B



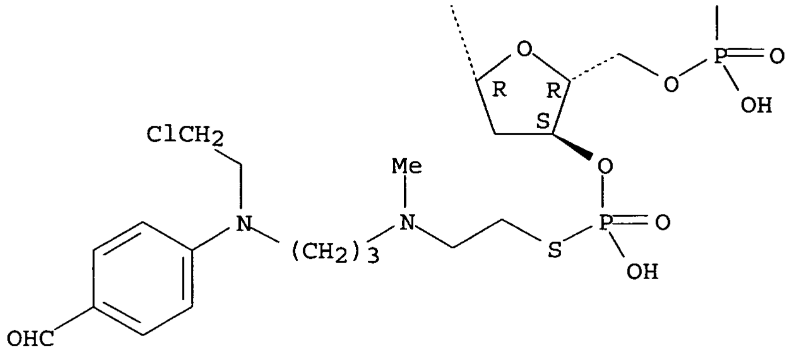
PAGE 2-A



PAGE 2-B



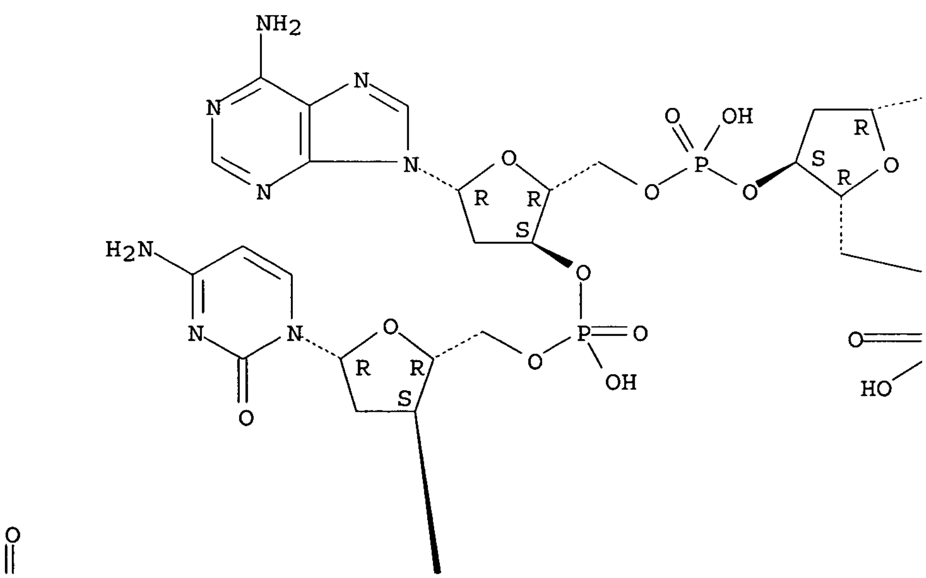
PAGE 3-A



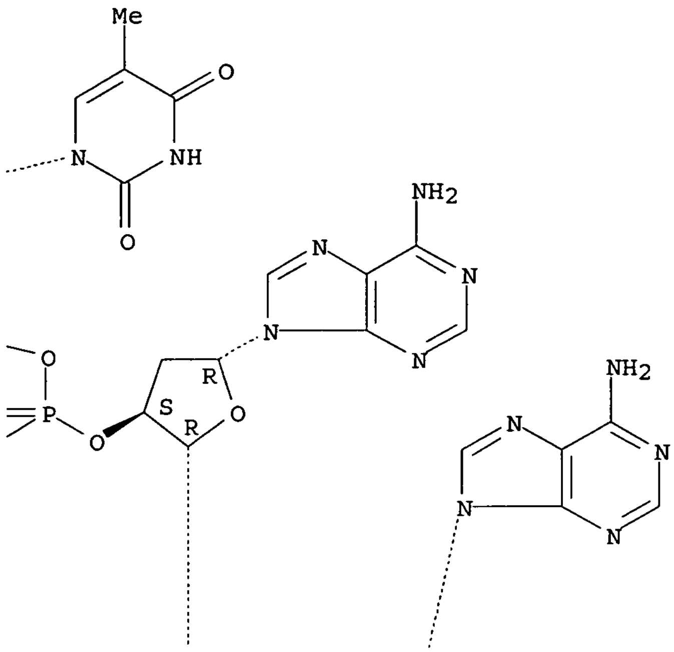
IT **92584-33-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as alkylating reagent for complementary deoxyribooligonucleotides)
RN 92584-33-3 HCAPLUS
CN Adenosine, 5'-O-phosphonothymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-, 3'-[S-[2-[[3-[(2-chloroethyl)[4-(hydroxymethyl)phenyl]amino]propyl]methylamino]ethyl] hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

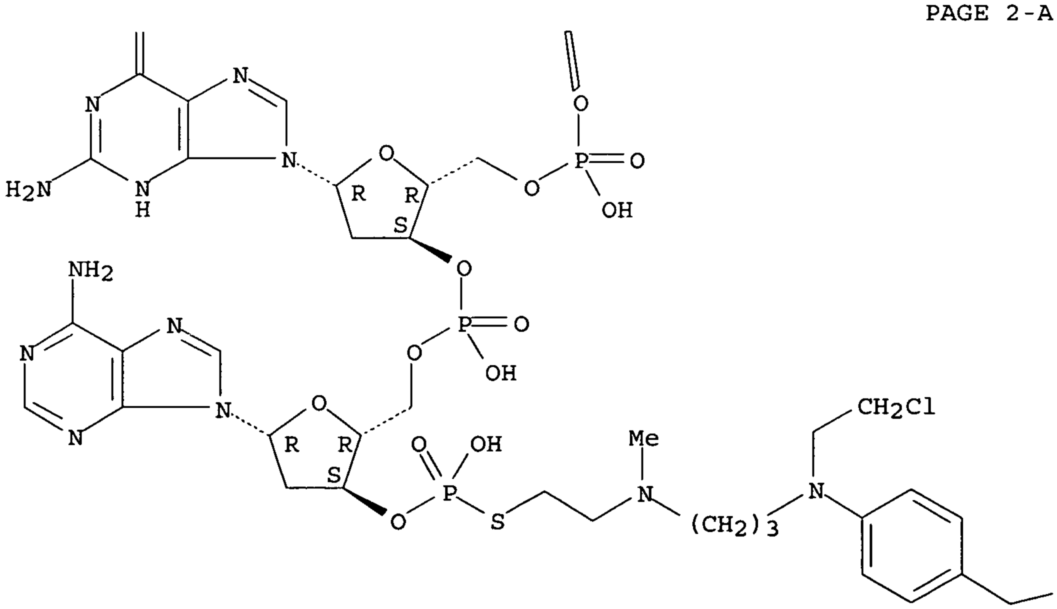
PAGE 1-A



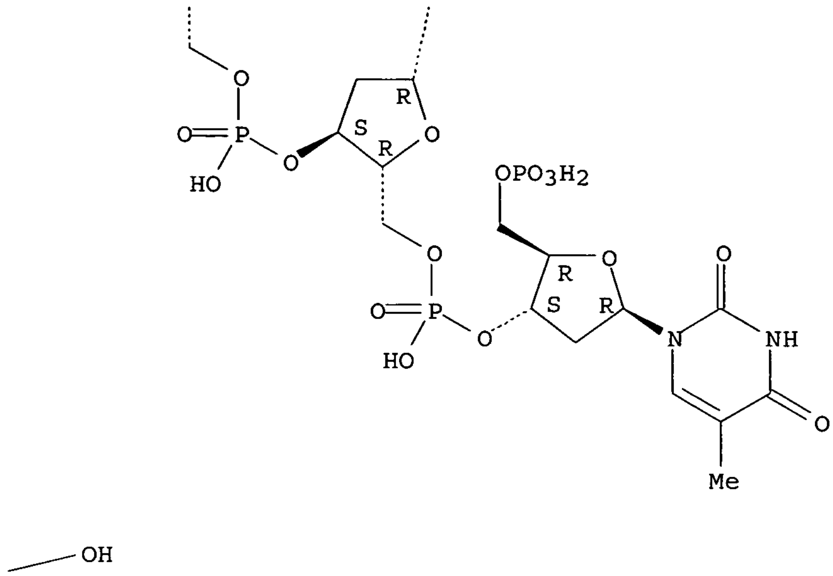
PAGE 1-B



PAGE 2-A



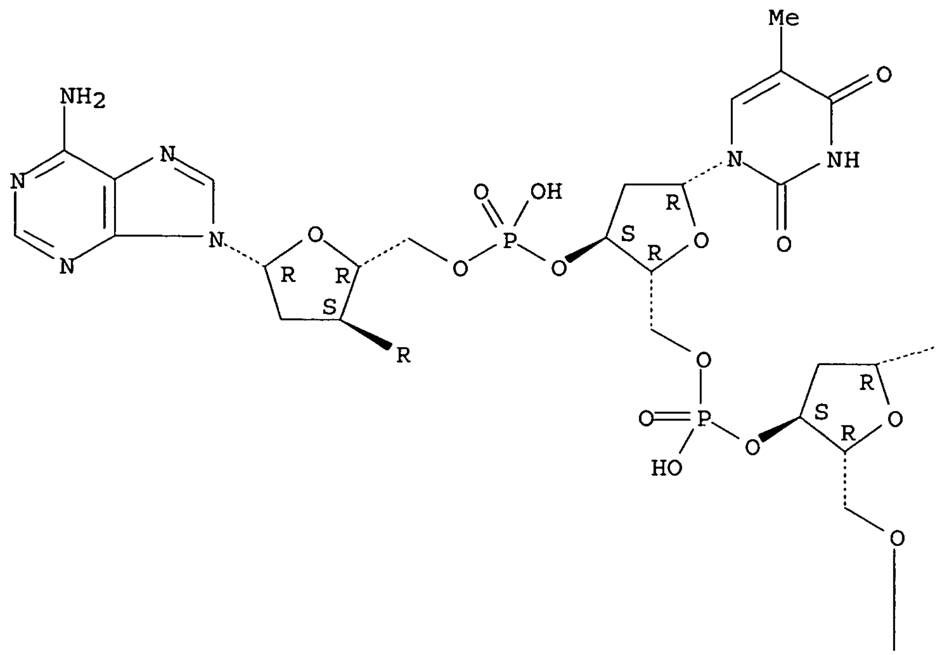
PAGE 2-B



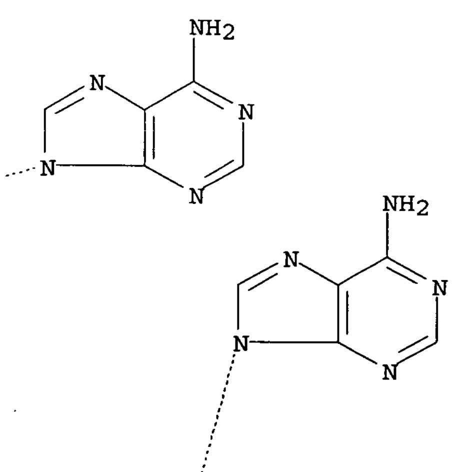
IT 92584-34-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bis(chloroethyl)(formylphenyl)propylenediamine)
RN 92584-34-4 HCAPLUS
CN Adenosine, 5'-O-phosphonothymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxyadenylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxyguanylyl-(3'→5')-2'-deoxy-, 3'-(dihydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

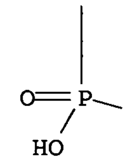
PAGE 1-A



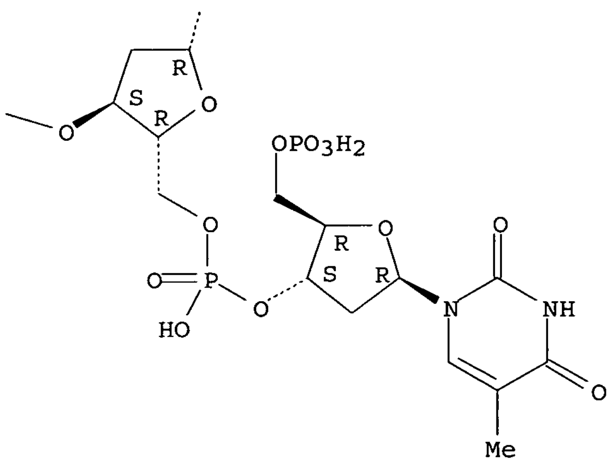
PAGE 1-B



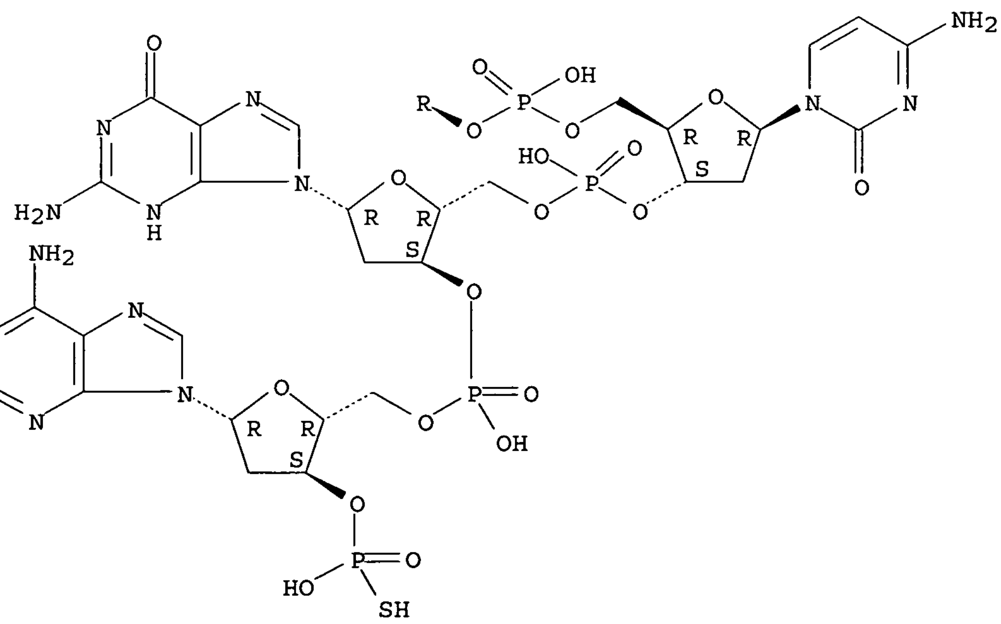
PAGE 2-A



PAGE 2-B



PAGE 3-A



L43 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:103795 HCAPLUS
DOCUMENT NUMBER: 100:103795
TITLE: Preparation of an affinity reagent with an alkylating group of regulated reactivity by alkylation of the oligonucleotide 5'-thiophosphate
AUTHOR(S): Oshevskii, S. I.; **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Inst. Cytol. Genet., Novosibirsk, USSR
SOURCE: Bioorganicheskaya Khimiya (1983), 9(9), 1265-8
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The 5'-thiophosphate of deoxyribooligonucleotide CpTpTpTpCpCpA was alkylated with N-methyl-N,N'-bis(2-chloroethyl)-N'-(p-formylphenyl)-1,3-propanediamine to give, after 40 min at room temperature, the S-alkyl derivative of the oligonucleotide. The S-alkyl derivative had an intact chloroethylamino group which becomes reactive after mild reduction of the formyl group with NaBH4 and can be used for affinity modification of DNA or enzymes.

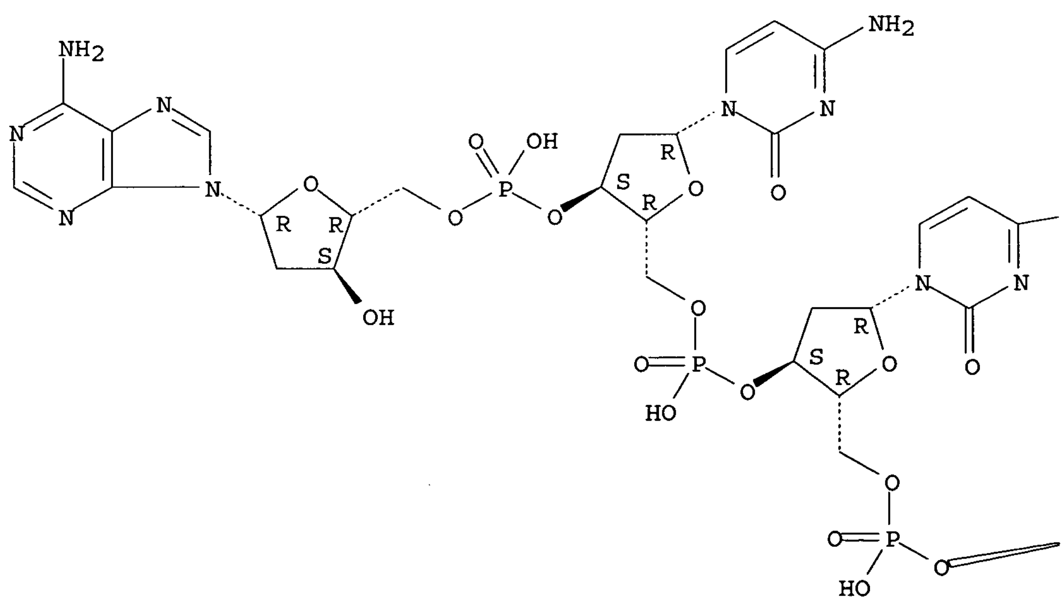
IT **83285-87-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, by methylbis(chloroethyl)(formylphenyl)propanediamine, S-alkyl derivative from)

RN 83285-87-4 HCAPLUS

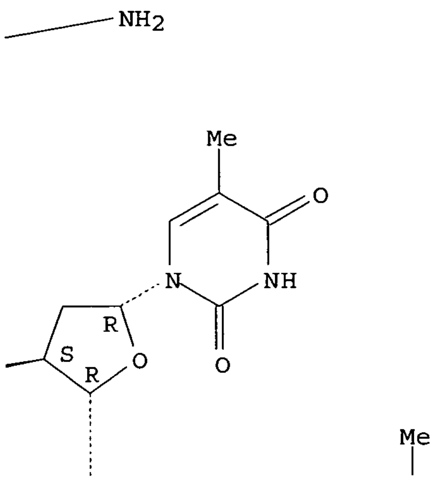
CN Adenosine, 2'-deoxy-5'-O-(hydroxymercaptophosphinyl)cytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

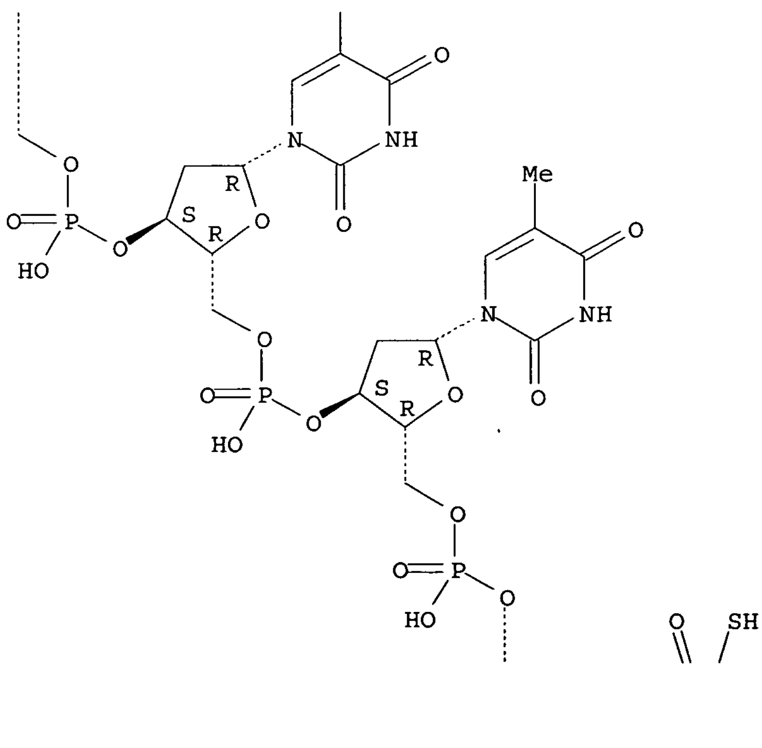
PAGE 1-A



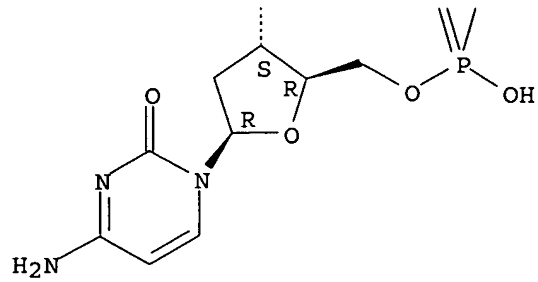
PAGE 1-B



PAGE 2-B



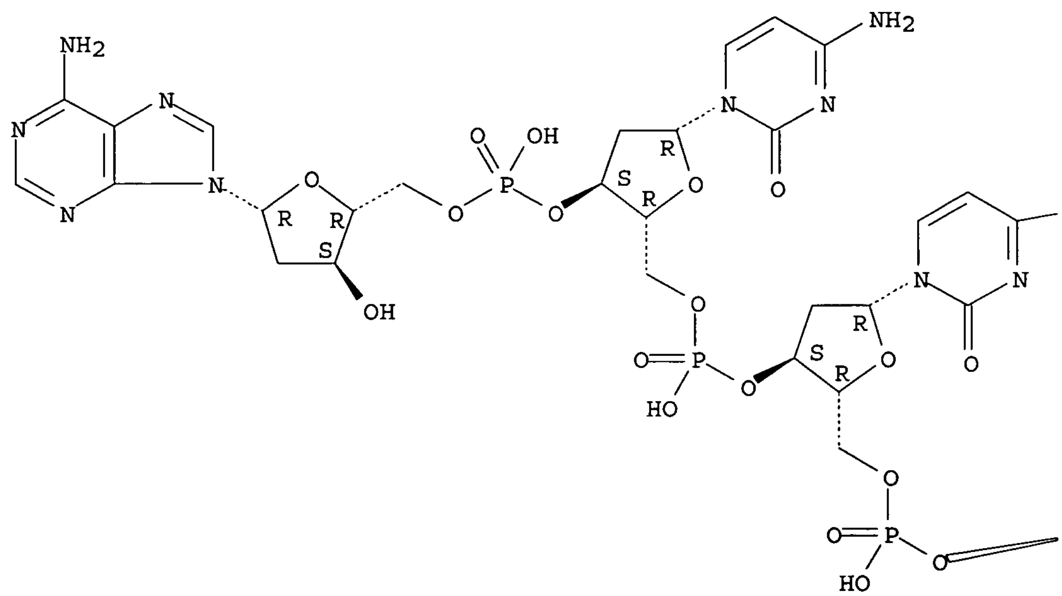
PAGE 3-B



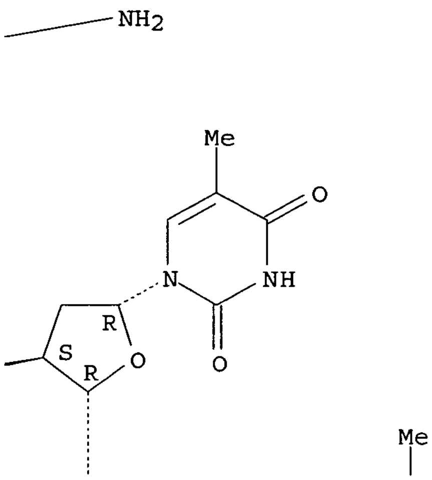
IT **89035-86-9P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and reactivity of)
RN 89035-86-9 HCAPLUS
CN Adenosine, 5'-O-[11-chloro-9-(4-formylphenyl)-1-hydroxy-5-methyl-1-oxido-2-thia-5,9-diaza-1-phosphaundec-1-yl]-2'-deoxycytidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-thymidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxycytidylyl-(3'→5')-2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

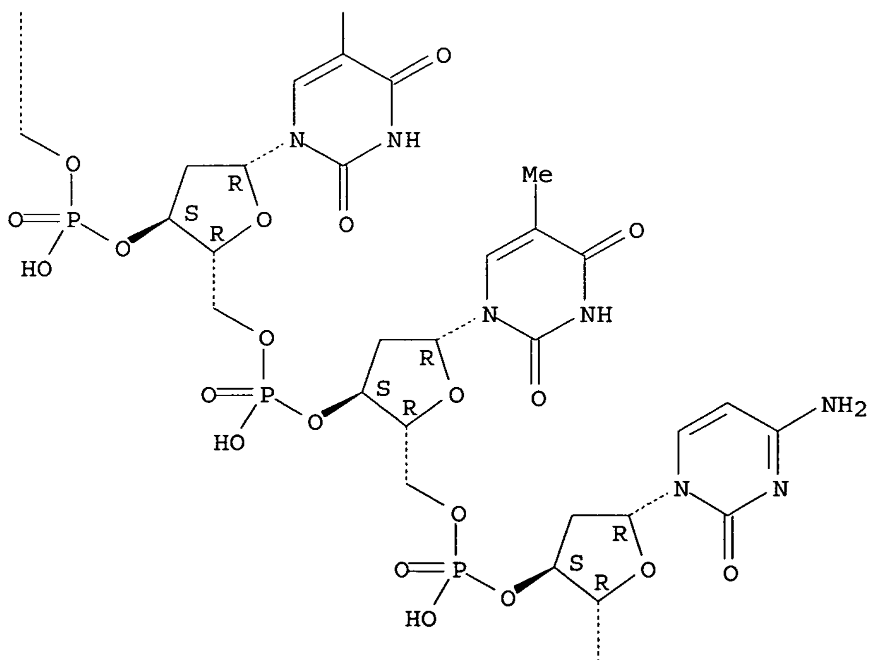
PAGE 1-A



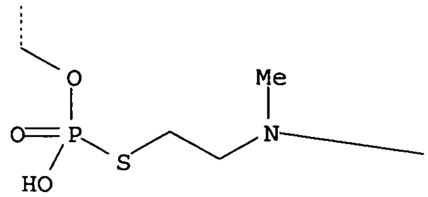
PAGE 1-B



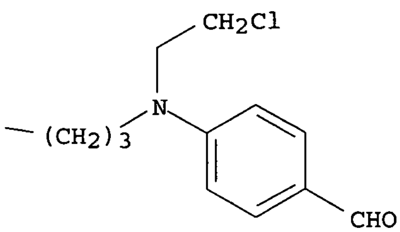
PAGE 2-B



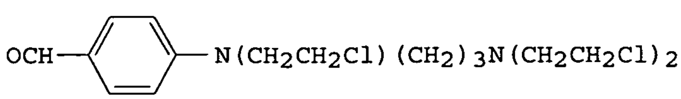
PAGE 3-B



PAGE 3-C



L43 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1978:419699 HCAPLUS
DOCUMENT NUMBER: 89:19699
TITLE: Directed action on the bacteriophage T7 genome using an early gene region transcript carring multiple alkylating groups
AUTHOR(S): Salganik, R. I.; Dianov, G. L.; Kurbatov, V. A.; Shishkin, G. A.; **Gall, A. A.**
CORPORATE SOURCE: Inst. Tsitol. Genet., Novosibirsk, USSR
SOURCE: Doklady Akademii Nauk SSSR (1978), 239(1), 217-19 [Genet.]
CODEN: DANKAS; ISSN: 0002-3264
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



I

AB Measurement of hypochromicity showed that poly(I) alkylated with N,N-bis(β-chloroethyl)-4-aminobenzaldehyde could form stable complexes with poly(C) when ≤13% of the poly(I) was alkylated. On this basis, N,N,N'-tris(β-chloroethyl)-N'-(p-formylphenyl)-1,3-propylenediamine (I) was used to alkylate 12-15% of the guanosine residues of an RNA transcript prepared with GTP-3H from phage T7 DNA. The alkylated transcript was hybridized with the H-chain of phage T7 DNA. $NaBH_4$ treatment followed by RNase digestion left a DNA strand containing radioactivity, showing that activation of the aromatic amine in I by reduction of the aldehyde had given crosslinking, i.e., alkylation of the DNA strand.

Thus, bifunctional reagents which selectively alkylate particular polynucleotides can be used for selective alkylation of complementary polynucleotides.

```
IT   30811-80-4
     RL: ANST (Analytical study)
        (hybridization of, with nitrogen mustard derivative of poly(I))
RN   30811-80-4  HCAPLUS
CN   5'-Cytidylic acid, homopolymer (9CI)  (CA INDEX NAME)

     CM   1

     CRN  63-37-6
     CMF  C9 H14 N3 O8 P
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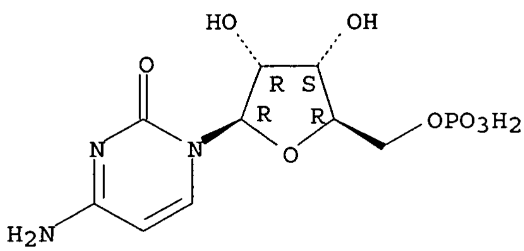
Absolute stereochemistry.



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L11             STR
L12             STR
L15             STR
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L19           3 SEA FILE=REGISTRY SUB=L2 SSS FUL L15
L20         238 SEA FILE=REGISTRY SUB=L2 SSS FUL L9
L21           0 SEA FILE=REGISTRY SSS FUL L12
L22           3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L19 OR L21
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L27        2250 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L26
L28        1647 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27 AND PD=<SEPTEMBER 30,
                2002
L29       61481 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (VIRUSTATS/CV OR "ANTIVIRAL
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L30          30 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L27(L)L29
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                DMITRI"/AU OR "SERGUEEV DMITRI S"/AU)
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L39      114935 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 NOT (L19 OR L24 OR L26)
L43          14 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L35 AND L39) NOT (L22 OR L30
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L45          56 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44 AND PD=<SEPTEMBER 30,
                2002


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L45  ANSWER 1 OF 56  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2002:946512  HCAPLUS
DOCUMENT NUMBER:          138:20449
TITLE:                    Oligonucleotide probes containing fluorophores,
                          quenchers, and minor groove binders and their use in
                          hybridization assays
INVENTOR(S):              Reed, Michael W.; Lukhtanov, Eugeny Alexander;
                          Gall, Alexander A.; Dempcy, Robert O.;
                          Vermeulen, Nicolaas M. J.
PATENT ASSIGNEE(S):       Epoch Biosciences, Inc., USA
SOURCE:                   PCT Int. Appl., 134 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   5
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
     WO 2002099141        A1    20021212    WO 2002-US17787        20020605
     WO 2002099141        C2    20040527
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,
             GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,
             GN, GQ, GW, ML, MR, NE, SN, TD, TG
     US 2002034754        A1    20020321    US 2001-876830         20010606 <--
     US 6790945           B2    20040914
     US 2003096254        A1    20030522    US 2002-113445         20020329
     US 2004081959        A9    20040429
     EP 1430147           A1    20040623    EP 2002-737392         20020605
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.:                      US 2001-876830      A  20010606
                                            US 2002-113445      A  20020329
                                            US 1999-457616      A2 19991208
                                            WO 2002-US17787     W  20020605
OTHER SOURCE(S):          MARPAT 138:20449
```

AB Fluorogenic oligonucleotide probes with quencher structures are provided for use in hybridization assays. The probes also can contain a minor groove binder. Methods and reagents for synthesizing such probes are provided. Thus, oligonucleotides containing fluorescein or TAMRA fluorophore, DABCYL, resorufin, coumarin, Red 1, or Red 13 quencher, and a minor groove binder were synthesized and characterized. Two such probes were used in a PCR assay for detection of a SNP in the RRM1 gene.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 2 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:877123 HCAPLUS
DOCUMENT NUMBER: 138:216951
TITLE: Reduced aggregation and improved specificity of G-rich oligodeoxyribonucleotides containing pyrazolo[3,4-d]pyrimidine guanine bases
AUTHOR(S): Kutyavin, Igor V.; Lokhov, Sergey G.; Afonina, Irina A.; Dempcy, Robert; **Gall, Alexander A.**; Gorn, Vladimir V.; Lukhtanov, Eugene; Metcalf, Mark; Mills, Alan; Reed, Michael W.; Sanders, Sylvia; Shishkina, Irina; Vermeulen, Nicolaas M. J.
CORPORATE SOURCE: Epoch Biosciences, Bothell, WA, 98021, USA
SOURCE: Nucleic Acids Research (**2002**), 30(22), 4952-4959
CODEN: NARHAD; ISSN: 0305-1048
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Guanine (G)-rich oligodeoxyribonucleotides (ODNs) can form undesired complexes by self association through non-Watson-Crick interactions. These aggregates can compromise performance of DNA probes and make genetic anal. unpredictable. We found that the 8-aza-7-deazaguanine (PPG), a pyrazolo[3,4-d]pyrimidine analog, reduces guanine self association of G-rich ODNs. In the PPG heterocycle, the N-7 and C-8 atoms of G are interposed. This leaves the ring system with an electron d. similar to G, but prevents Hoogsteen-bonding associated with N-7. ODNs containing multiple PPG bases were easily prepared using a dimethylformamidine-protected phosphoramidite reagent. Substitution of PPG for G in ODNs allowed formation of more stable DNA duplexes. When one or more PPGs were substituted for G in ODNs containing four or more consecutive Gs, G aggregation was eliminated. Substitution of PPG for G also improved discrimination of G/A, G/G and G/T mismatches in Watson-Crick hybrids. Use of PPG in fluorogenic minor groove binder probes was also explored. PPG prevented aggregation in MGB probes (MGBTM is a trademark of Epoch Biosciences) and allowed use of G-rich sequences. An increased signal was observed in 5'-PPG probes due to reduced quenching of fluorescein by PPG. In summary, substitution of PPG for G enhances affinity, specificity, sensitivity and predictability of G-rich DNA probes.

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 3 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:221154 HCAPLUS
DOCUMENT NUMBER: 136:258286
TITLE: Oligonucleotide-quencher-fluorescent dye conjugates and their use in nucleic acid hybridization
INVENTOR(S): Reed, Michael W.; Lukhtanov, Eugeny Alexander; **Gall, Alexander A.**; Dempcy, Robert O.; Vermeulen, Nicolaas M. J.
PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 63 pp., Cont.-in-part of U. S. Ser. No. 457,616.
CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002034754	A1	20020321	US 2001-876830	20010606 <--
US 6790945	B2	20040914		
US 6727356	B1	20040427	US 1999-457616	19991208
US 2003008304	A1	20030109	US 2002-84818	20020226
US 6653473	B2	20031125		
US 2002155484	A1	20021024	US 2002-93769	20020307
US 6699975	B2	20040302		
US 2003096254	A1	20030522	US 2002-113445	20020329
US 2004081959	A9	20040429		
WO 2002099141	A1	20021212	WO 2002-US17787	20020605
WO 2002099141	C2	20040527		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1430147	A1	20040623	EP 2002-737392	20020605

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003175728	A1	20030918	US 2002-165410	20020606
US 2004191796	A1	20040930	US 2003-606644	20030625

PRIORITY APPLN. INFO.:

APPLICATION NO.	KIND	DATE
US 1999-457616	A2	19991208
US 2001-876830	A3	20010606
US 2001-302137P	P	20010629
US 2002-351637P	P	20020123
US 2002-93769	A3	20020307
US 2002-113445	A	20020329
WO 2002-US17787	W	20020605

OTHER SOURCE(S): MARPAT 136:258286

AB The invention relates to oligonucleotide-quencher-fluorescent dye conjugates having improved characteristics, and to reagents suitable for incorporating novel quencher and fluorescent dye moieties into oligonucleotides. The invention also related to the use of oligonucleotide-quencher-fluorescent dye conjugates in detection methods for nucleic acid targets. Thus, a 14-nucleotide probe having a fluorescein moiety at the 5'-terminal and a minor groove binder and phenylazophenyl derivative at the 3'-terminus was prepared and used in SNP detection of RRM1 alleles by PCR.

REFERENCE COUNT: 104 THERE ARE 104 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 4 OF 56 HCAPLUS
ACCESSION NUMBER: 2001:458666 HCAPLUS
DOCUMENT NUMBER: 135:143503

TITLE: Decays of the $\pi+\pi-$ atom
AUTHOR(S): Gasser, J.; Lyubovitskij, V. E.; Rusetsky, A.; **Gall, A.**
CORPORATE SOURCE: Institute for Theoretical Physics, University of Bern, Bern, CH-3012, Switz.
SOURCE: Physical Review D: Particles and Fields (**2001**), 64(1), 016008/1-016008/21
CODEN: PRVDAQ; ISSN: 0556-2821
PUBLISHER: American Physical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We construct an effective non-relativistic quantum field theory that describes bound states of $\pi+\pi-$ pairs and their hadronic decays. We then derive a general expression for the lifetime of the ground state at next-to-leading order in isospin breaking. Chiral perturbation theory allows one to relate the decay rate to the two S-wave $\pi\pi$ scattering lengths and to several low-energy consts. that occur in the chiral Lagrangian. Recent predictions for the scattering lengths give $\tau=(2.9\pm0.1)+10-15$ s. This result may be compared with $\pi+\pi-$ lifetime measurements, like the one presently carried out at CERN.

REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 5 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:435306 HCAPLUS
DOCUMENT NUMBER: 135:41772
TITLE: Fluorophore-oligonucleotide-4-(phenyldiazenyl)phenylamine quencher conjugates for use in hybridization assays
INVENTOR(S): Reed, Michael W.; Lukhtanov, Eugeny Alexander; **Gall, Alexander A.**; Dempcy, Robert O.
PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 122 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042505	A2	20010614	WO 2000-US33333	20001208 <--
WO 2001042505	A3	20020124		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6727356	B1	20040427	US 1999-457616	19991208
CA 2396795	AA	20010614	CA 2000-2396795	20001208 <--
EP 1235938	A2	20020904	EP 2000-984069	20001208 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003516163	T2	20030513	JP 2001-544376	20001208
AU 782204	B2	20050714	AU 2001-20748	20001208

US 2002155484	A1	20021024	US 2002-93769	20020307
US 6699975	B2	20040302		
US 2004191796	A1	20040930	US 2003-606644	20030625

PRIORITY APPLN. INFO.: US 1999-457616 A 19991208
WO 2000-US33333 W 20001208
US 2002-93769 A3 20020307

OTHER SOURCE(S): MARPAT 135:41772

AB Oligonucleotide-fluorophore-quencher conjugates wherein the fluorophore moiety has emission wavelengths in the range of about (300) to about (800) nm, and or where the quencher includes a substituted 4-(phenyldiazenyl)phenylamine structure provide improved signal to noise ratios and other advantageous characteristics in hybridization and related assays. The oligonucleotide-fluorophore-quencher conjugates can be synthesized by utilizing novel phosphoramidite reagents that incorporate the quencher moiety based on the substituted 4-(phenyldiazenyl)phenylamine structure, and or novel phosphoramidite reagents that incorporate a fluorophore moiety based on the substituted coumarin, substituted 7-hydroxy-3H-phenoxazin-3-one, or substituted 5,10-dihydro-10-[phenyl]pyrido[2,3-d;6,5-d']dipyrimidine-2,4,6,8-(1H,3H,7H,9H,10H)-tetrone structure. Oligonucleotide-fluorophore-quencher-minor groove binder conjugates including a pyrrolo[4,5-e]indolin-7-yl-carbonyl{pyrrolo[4,5-e]indolin-7-yl}carbonyl pyrrolo[,5-e]indoline-7-carboxylate (DPI3) moiety as the minor groove binder and the substituted 4-(phenyldiazenyl)phenylamine moiety as the quencher, were synthesized and have substantially improved hybridization and signal to noise ratio properties.

L45 ANSWER 6 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:397098 HCAPLUS
DOCUMENT NUMBER: 135:15068
TITLE: Non-aggregating, non-quenching oligomers containing pyrazolopyrimidines and deazapurines and their use as hybridization probes
INVENTOR(S): **Gall, Alexander A.**; Kutyavin, Igor V.; Vermeulen, Nicolaas M. J.; Dempcy, Robert O.
PATENT ASSIGNEE(S): Epoch Biosciences, Inc., USA
SOURCE: PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001038584	A2	20010531	WO 2000-US32265	20001121 <--
WO 2001038584	A3	20011025		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6660845	B1	20031209	US 1999-447936	19991123
CA 2392033	AA	20010531	CA 2000-2392033	20001121 <--
EP 1232157	A2	20020821	EP 2000-980769	20001121 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

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          IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     JP 2003527579        T2     20030916   JP 2001-539925          20001121
     US 2004116689        A1     20040617   US 2003-702007          20031104
     US 6972328           B2     20051206
     US 2005239121        A1     20051027   US 2005-129003          20050513
PRIORITY APPLN. INFO.:                      US 1999-447936       A  19991123
                                            WO 2000-US32265      W  20001121
                                            US 2003-702007       A3 20031104
OTHER SOURCE(S):          MARPAT 135:15068
```

AB The invention provides compns. and methods for improved hybridization anal. utilizing DNA, RNA, PNA and chimeric oligomers in which one or more purine bases are substituted by a pyrazolo[5,4-d]pyrimidine or by a 7-deazapurine purine analog. Reduced self-aggregation and reduced fluorescence quenching are obtained when the oligomers are used in various methods involving hybridization. Methods of synthesis, as well as novel synthetic precursors, are also provided.

L45 ANSWER 7 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:289428 HCAPLUS
DOCUMENT NUMBER: 135:207582
TITLE: Atomic force microscopy of DNA and protein-DNA complexes using functionalized mica substrates
AUTHOR(S): Lyubchenko, Yuri L.; **Gall, Alexander A.**; Shlyakhtenko, Luda S.
CORPORATE SOURCE: Departments of Biology and Microbiology, Arizona State University, Tempe, AZ, USA
SOURCE: Methods in Molecular Biology (Totowa, NJ, United States) (**2001**), 148(DNA-Protein Interactions (2nd Edition)), 569-578
CODEN: MMBIED; ISSN: 1064-3745
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 28 refs. Materials and methods are presented for the functionalization of the mica surface with amine groups (AP-mica); sample preparation for atomic force microscopy (AFM) imaging in air; AFM imaging in air;
AFM imaging in solution; and alternative methods for AFM sample preparation

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 8 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:150227 HCAPLUS
DOCUMENT NUMBER: 134:350800
TITLE: Probing the binding sites of exchanged chlorophyll a in LH2 by Raman and site-selection fluorescence spectroscopies
AUTHOR(S): **Gall, A.**; Robert, B.; Cogdell, R. J.; Bellissent-Funel, M.-C.; Fraser, N. J.
CORPORATE SOURCE: Laboratoire Leon Brillouin (CEA-CNRS), CEA-Saclay, Gif-sur-Yvette, 91191, Fr.
SOURCE: FEBS Letters (**2001**), 491(1,2), 143-147
CODEN: FEBLAL; ISSN: 0014-5793
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have selectively released the 800 nm absorbing bacteriochlorophyll a mols. of the LH2 protein from the photosynthetic bacterium Rhodopseudomonas acidophila, strain 10050, and replaced them with chlorophyll a (Chla). A combination of low-temperature electronic

absorption, resonance Raman and site-selection fluorescence spectroscopies revealed that the Chla pigments are indeed bound in the B800 binding site; this is the first work that formally proves that such non-native chlorins can be inserted correctly into LH2.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 9 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:908419 HCAPLUS
DOCUMENT NUMBER: 134:184423
TITLE: Effective Lagrangians in Bound State Calculations
AUTHOR(S): Antonelli, V.; **Gall, A.**; Gasser, J.; Rusetsky, A.
CORPORATE SOURCE: Institute for Theoretical Physics, University of Bern, Bern, CH-3012, Switz.
SOURCE: Annals of Physics (Orlando, Florida) (**2000**), 286(1), 108-156
CODEN: APNYA6; ISSN: 0003-4916
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In order to investigate specific aspects of bound state calcns. in a non-relativistic framework, we consider the energy-levels of a massive scalar particle, which moves in an external field and interacts in addition with a massless scalar particle. The discussion includes the following topics: dimensionally regularized bound-state calcns., UV finiteness of bound-state observables and their independence of the off-mass-shell behavior of Green functions, non-renormalizable interactions, structure of the non-relativistic two-point function, power counting, and matching. (c) 2000 Academic Press.
REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 10 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:682446 HCAPLUS
DOCUMENT NUMBER: 134:188815
TITLE: Structure and dynamics of three-way DNA junctions: atomic force microscopy studies
AUTHOR(S): Shlyakhtenko, Luda S.; Potaman, Vladimir N.; Sinden, Richard R.; **Gall, Alexander A.**; Lyubchenko, Yuri L.
CORPORATE SOURCE: Dep. Microbiol., Arizona State Univ., Tempe, AZ, 85287-2701, USA
SOURCE: Nucleic Acids Research (**2000**), 28(18), 3472-3477
CODEN: NARHAD; ISSN: 0305-1048
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have used atomic force microscopy (AFM) to study the conformation of three-way DNA junctions, intermediates of DNA replication and recombination. Immobile three-way junctions with one hairpin arm (50, 27, 18 and 7 bp long) and two relatively long linear arms were obtained by annealing two partially homologous restriction fragments. Fragments containing inverted repeats of specific length formed hairpins after denaturation. Three-way junctions were obtained by annealing one strand of a fragment from a parental plasmid with one strand of an inverted repeat-containing fragment, purified from gels, and examined by AFM. The mols. are clearly seen as three-armed mols. with one short arm and two flexible long arms. The AFM anal. revealed two important features of three-way DNA

junctions. First, three-way junctions are very dynamic structures. This conclusion is supported by a high variability of the inter-arm angle detected on dried samples. The mobility of the junctions was observed directly by imaging the samples in liquid (AFM in situ). Second, measurements of the angle between the arms led to the conclusion that three-way junctions are not flat, but rather pyramid-like. Non-flatness of the junction should be taken into account in anal. of the AFM data.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 11 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:283556 HCAPLUS

DOCUMENT NUMBER: 133:346652

TITLE: Nanosecond protein dynamics of the RC and LH complexes as measured by coherent inelastic neutron spin-echo spectroscopy

AUTHOR(S): **Gall, A.**; Seguin, J.; Bellissent-Funel, M-C.; Robert, B.

CORPORATE SOURCE: Section de Biophysique des Proteines et des Membranes, DBCM/CEA and URA2096/CNRS, C.E. Saclay, Gif-sur-Yvette, 91191, Fr.

SOURCE: Photosynthesis: Mechanisms and Effects, Proceedings of the International Congress on Photosynthesis, 11th, Budapest, Aug. 17-22, 1998 (**1998**), Volume 5, 4373-4376. Editor(s): Garab, Gyozo. Kluwer Academic Publishers: Dordrecht, Neth.
CODEN: 68VVAS

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A study was conducted whereby the photochem. reaction center and its peripheral light-harvesting complex (LH2) complex were purified in order to measure and compare their coherent dynamics in the nanosecond time-domain using inelastic neutron spin-echo (NSE) spectroscopy. In summary, LH2 consists of 18 independent transmembrane spanning α-helixes located within 9 identical α/β-heterodimer subunits that form a ring-like structure in the membrane. However, the RC has three much larger subunits with less overall symmetry, and is more globular-like.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 12 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:100781 HCAPLUS

DOCUMENT NUMBER: 132:330406

TITLE: 3'-Minor groove binder-DNA probes increase sequence specificity at PCR extension temperatures

AUTHOR(S): Kutyavin, Igor V.; Afonina, Irina A.; Mills, Alan; Gorn, Vladimir V.; Lukhtanov, Eugeny A.; Belousov, Evgeniy S.; Singer, Michael J.; Walburger, David K.; Lokhov, Sergey G.; **Gall, Alexander A.**; Dempcy, Robert; Reed, Michael W.; Meyer, Rich B.; Hedgpeth, Joe

CORPORATE SOURCE: Epoch Pharmaceuticals, Inc., Redmond, WA, 98052, USA

SOURCE: Nucleic Acids Research (**2000**), 28(2), 655-661
CODEN: NARHAD; ISSN: 0305-1048

PUBLISHER: Oxford University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB DNA probes with conjugated minor groove binder (MGB) groups form extremely

stable duplexes with single-stranded DNA targets, allowing shorter probes to be used for hybridization based assays. In this paper, sequence specificity of 3'-MGB probes was explored. In comparison with unmodified DNA, MGB probes had higher melting temperature (Tm) and increased specificity, especially when a mismatch was in the MGB region of the duplex. To exploit these properties, fluorogenic MGB probes were prepared and investigated in the 5'-nuclease PCR assay (real-time PCR assay, TaqMan assay). A 12mer MGB probe had the same Tm (65°) as a no-MGB 27mer probe. The fluorogenic MGB probes were more specific for single base mismatches and fluorescence quenching was more efficient, giving increased sensitivity. A/T rich duplexes were stabilized more than G/C rich duplexes, thereby leveling probe Tm and simplifying design. In summary, MGB probes were more sequence specific than standard DNA probes, especially for single base mismatches at elevated hybridization temps.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 13 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:737403 HCAPLUS
DOCUMENT NUMBER: 131:342991
TITLE: On the lifetime of the $\pi+\pi-$ atom
AUTHOR(S): **Gall, A.**; Gasser, J.; Lyubovitskij, V. E.; Rusetsky, A.
CORPORATE SOURCE: Institute for Theoretical Physics, University of Bern, Bern, CH-3012, Switz.
SOURCE: Physics Letters B (**1999**), 462(3,4), 335-340
CODEN: PYLBAJ; ISSN: 0370-2693
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The $\pi+\pi-$ atom decays - in the ground state - predominantly into two neutral pions. We present a general expression for the corresponding decay width in the framework of QCD (including photons). It contains all terms at leading and next-to-leading order in isospin breaking. The result allows one to evaluate the combination a0-a2 of $\pi\pi$ S-wave scattering lengths from $\pi+\pi-$ lifetime measurements, like the one presently performed by the DIRAC experiment at CERN.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 14 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:428814 HCAPLUS
DOCUMENT NUMBER: 131:211144
TITLE: Atomic force microscopy imaging of DNA covalently immobilized on a functionalized mica substrate
AUTHOR(S): Shlyakhtenko, Luda S.; **Gall, Alexander A.**; Weimer, Jeffrey J.; Hawn, David D.; Lyubchenko, Yuri L.
CORPORATE SOURCE: Department of Microbiology, Arizona State University, Tempe, AZ, 85287-2701, USA
SOURCE: Biophysical Journal (**1999**), 77(1), 568-576
CODEN: BIOJAU; ISSN: 0006-3495
PUBLISHER: Biophysical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A procedure for covalent binding of DNA to a functionalized mica substrate is described. The approach is based on photochem. crosslinking of DNA to immobilized psoralen derivs. A tetrafluorphenyl (TFP) ester of tri-Me psoralen (trioxalen) was synthesized, and the procedure to immobilize it onto a functionalized aminopropyl mica surface (AP-mica) was developed.

DNA mols. were cross-linked to trioxalen moieties by UV irradiation of complexes. The steps of the sample preparation procedure were analyzed with XPS (XPS). Results from XPS show that an AP-mica surface can be formed by vapor phase deposition of silane and that this surface can be derivatized with trioxalen. The derivatized surface is capable of binding of DNA mols. such that, after UV crosslinking, they withstand a thorough rinsing with SDS. Observations with atomic force microscopy showed that derivatized surfaces remain smooth, so DNA mols. are easily visualized. Linear and circular DNA mols. were photochem. immobilized on the surface. The mols. are distributed over the surface uniformly, indicating rather even modification of AP-mica with trioxalen. Generally, the shapes of supercoiled mols. electrostatically immobilized on AP-mica and those photocross-linked on trioxalen-functionalized surfaces remain quite similar. This suggests that UV crosslinking does not induce formation of a noticeable number of single-stranded breaks in DNA mols.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 15 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:721711 HCAPLUS
DOCUMENT NUMBER: 130:4029
TITLE: Triplex forming oligonucleotides including pyrazolo(3,4-d)pyrimidine bases
INVENTOR(S): Meyer, Rich B.; **Gall, Alexander**; Kutyavin, Igor V.
PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
WO 9849180	A1	19981105	WO 1998-US8373		19980429	<--

W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, FI, GE, GH, GM, GW, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
US 6143877	A	20001107	US 1997-848373		19970430	<--
AU 9872586	A1	19981124	AU 1998-72586		19980429	<--
PRIORITY APPLN. INFO.:			US 1997-848373	A	19970430	
			WO 1998-US8373	W	19980429	

AB A triplex forming oligonucleotide is complementary pursuant to the G/T or A/G recognition motif to a homopurine, or substantially homopurine target sequence in double stranded nucleic acids, and at least one and preferably all of the guanine bases are replaced by their pyrazolo[3,4-d]pyrimidine analog, namely by 6-amino-1H-pyrazolo[3,4-d]pyrimidin-4(5H)-one. The oligodeoxyribonucleotides containing the pyrazolo[3,4-d]pyrimidine analog of guanine exhibit a lesser degree of self-association, and lack the nucleophilic nitrogen atom in the 7 position of guanine. The latter feature results in a diminished extent of self-crosslinking in ODNs which also have a covalently attached crosslinking agent.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 16 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:420422 HCAPLUS
DOCUMENT NUMBER: 129:199948
TITLE: Atomic force microscopy of DNA, nucleoproteins and cellular complexes: the use of functionalized substrates
AUTHOR(S): Lyubchenko, Yuri L.; Blankenship, Robert E.; **Gall, Alexander A.**; Lindsay, S. M.; Thiemann, Ottavio; Simpson, Larry; Shlyakhtenko, Luda S.
CORPORATE SOURCE: Department of Microbiology, Arizona State University, Tempe, AZ, 85287-2701, USA
SOURCE: Scanning Microscopy, Supplement (**1996**), 10(Science of Biological Specimen Preparation for Microscopy), 97-109
CODEN: SMSUEU; ISSN: 0892-953X
PUBLISHER: Scanning Microscopy International
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Progress towards rapid and simple characterization of biomol. samples by scanning probe microscopy is impeded mainly by limitations of the current approach to sample preparation We are working on approaches based on chemical functionalization of mica. Treatment of mica with aminopropyltriethoxy silane (APTES) makes the surface pos. charged (AP-mica) and able to hold DNA in place for imaging, even in water. We have shown that AP-mica is an appropriate substrate for numerous nucleoprotein complexes as well. The AFM images of the complex of DNA with RecA protein are stable and indicate a structural periodicity for this filament. AP-mica holds strongly such large DNA complexes as kinetoplast DNA (kDNA) and is an appropriate substrate for their imaging with AFM. We have further develop this approach for making hydrophobic substrates. Silylation of mica surface with hexamethyldisilazane (Me-mica) allowed us to get AFM images of chlorosomes, an antenna complex isolated from green photosynthetic bacteria. Me-mica may be converted into a pos. charged substrate after treatment with water solns. of tetraethylammonium bromide or cetyltrimethylammonium bromide. These activated surfaces show high activity towards binding the DNA mols.
REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 17 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:193022 HCAPLUS
DOCUMENT NUMBER: 128:317694
TITLE: Triplex targeting of a native gene in permeabilized intact cells: covalent modification of the gene for the chemokine receptor CCR5
AUTHOR(S): Belousov, Evgeniy S.; Afonina, Irina A.; Kutyavin, Igor V.; **Gall, Alexander A.**; Reed, Michael W.; Gamper, Howard B.; Wydro, Robert M.; Meyer, Rich B.
CORPORATE SOURCE: Epoch Pharmaceuticals Inc., WA, 98021, USA
SOURCE: Nucleic Acids Research (**1998**), 26(5), 1324-1328
CODEN: NARHAD; ISSN: 0305-1048
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A 12 nucleotide oligodeoxyribopurine tract in the gene for the chemokine receptor CCR5 has been targeted and covalently modified in intact cells by a 12mer triplex forming oligonucleotide (TFO) bearing a reactive group. A

nitrogen mustard placed on the 5'-end of the purine motif TFO modified a guanine on the DNA target with high efficiency and selectivity. A new use of a guanine analog in these TFOs significantly enhanced triplex formation and efficiency of modification, as did the use of the triplex-stabilizing intercalator coralyne. This site-directed modification of a native chromosomal gene in intact human cells under conditions where many limitations of triplex formation have been partially addressed underscores the potential of this approach for gene control via site-directed mutagenesis.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 18 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:54 HCAPLUS
DOCUMENT NUMBER: 128:61753
TITLE: Synthesis and Reactivity of Aryl Nitrogen Mustard-Oligodeoxyribonucleotide Conjugates
AUTHOR(S): Reed, Michael W.; Lukhtanov, Eugeny A.; Gorn, Vladimir; Kutyavin, Igor; **Gall, Alexander**; Wald, Ansel; Meyer, Rich B.
CORPORATE SOURCE: Epoch Pharmaceuticals Inc, Bothell, WA, 98021, USA
SOURCE: Bioconjugate Chemistry (**1998**), 9(1), 64-71
CODEN: BCCHES; ISSN: 1043-1802
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A versatile method is described for preparing aryl nitrogen mustard-oligodeoxyribonucleotide (mustard-ODN) conjugates under anhydrous conditions. The chemical uses DMSO soluble triethylammonium or tributylammonium salts of the ODNs. A G/A motif triplex forming ODN was chosen for study since it had been shown earlier to bind with high affinity and specificity to a duplex DNA target. A 5'-hexylamine derivative of this ODN was reacted with three different 2,3,5,6-tetrafluorophenyl ester derivs. of aryl nitrogen mustards which were designed to have different alkylation rates. An HPLC assay was used to determine reaction rates of these mustard-ODNs under various conditions. The reactivity of the mustard groups depended on chloride concentration and the presence of nucleophiles. Conjugation of mustards to G/A-containing ODNs decreased their aqueous stability. Hydrolysis and alkylation rates of these agents were consistent with reaction via an aziridinium intermediate. Rates of sequence specific alkylation within a triplex were determined by denaturing gel electrophoresis and shown to depend on inherent reactivity of the mustard group. The improved synthesis and chemical characterization of mustard-ODNs should facilitate their use as sequence specific alkylating agents and as probes for nucleic acid structure.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 19 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:574533 HCAPLUS
DOCUMENT NUMBER: 127:220937
TITLE: Preparation of oligodeoxyribonucleotide-cyclopropapyrroloindole conjugates as sequence specific hybridization and crosslinking agents for nucleic acids
INVENTOR(S): Kutyavin, Igor V.; Lukhtanov, Eugeny A.; Gamper, Howard B.; Meyer, Rich B., Jr.; **Gall, Alexander**

PATENT ASSIGNEE(S): Epoch Pharmaceuticals, Inc., USA
SOURCE: U.S., 14 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5659022	A	19970819	US 1996-583435	19960105 <--
PRIORITY APPLN. INFO.:			US 1996-583435	19960105

OTHER SOURCE(S): MARPAT 127:220937

AB Covalently linked conjugates of oligonucleotides (ODNs) with a cyclopropapyrroloindole moiety or an analog thereof, selectively and efficiently alkylate and crosslink with nucleic acid sequences that are complementary to the base sequence of the ODN.

L45 ANSWER 20 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:202407 HCAPLUS
DOCUMENT NUMBER: 126:209734
TITLE: The pigment-protein interactions of some unusual light-harvesting antennae: A Raman study
AUTHOR(S): **Gall, A.**; Yurkov, V.; Cogdell, R.J.; Vermeglio, A.; Robert, B.
CORPORATE SOURCE: DBCM/CEA and URA 1290/CNRS, Centre d'Etudes de Saclay, Gif sur Yvette, F-91191, Fr.
SOURCE: Photosynthesis: From Light to Biosphere, Proceedings of the International Photosynthesis Congress, 10th, Montpellier, Fr., Aug. 20-25, 1995 (**1995**), Volume 1, 251-254. Editor(s): Mathis, Paul. Kluwer: Dordrecht, Neth.
CODEN: 64DFAW
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The data suggest that free 2-acetyl carbonyl groups are present in the Chromatium purpuratum B830-complex. The B798-832 complex from Erythromicrobium ramosum is more complex and has Raman bands at 1649, 1669 and at 1687 cm-1 but does not tentatively also suggest a reduction in 2-acetyl H-bonding. This study has shown evidence that the degree of BChla macrocycle H-bonding contributes to the NIR absorption maximum in bacterial light-harvesting antennae. This study has been unable to elucidate the mol. interactions in Rhodopseudomonas palustris LHII at the level of the chromatophores.

L45 ANSWER 21 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:539064 HCAPLUS
DOCUMENT NUMBER: 122:310991
TITLE: Optical and optically detected magnetic resonance investigation on purple photosynthetic bacterial antenna complexes
AUTHOR(S): Angerhofer, A.; Bornhaeuser, F.; **Gall, A.**; Cogdell, R. J.
CORPORATE SOURCE: 3. Physikalisches Institut, Universitaet Stuttgart, Stuttgart, D-70550, Germany
SOURCE: Chemical Physics (**1995**), 194(2,3), 259-74
CODEN: CMPHC2; ISSN: 0301-0104
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Low temperature (10 K) absorption, fluorescence emission, fluorescence excitation, absorption detected magnetic resonance, and microwave induced absorption spectra were recorded together with temperature dependent light induced absorption transients of carotenoid triplet formation and decay in the B800-850 antenna complexes of Rhodobacter sphaeroides G1C, R. sphaeroides 2.4.1, Rps. acidophila 10050, Rps. palustris I, and Rps. palustris II (low-light), in B800-820 antenna complexes of Rps. acidophila 7050, and Rps. cryptolactis, and in the B830 complex of Chr. purpuratum. From the spectra the zero field splitting parameters +mid;D+mid; and +mid;E+mid; were extracted as well as the energies of the main carotenoid triplet-triplet and singlet-singlet transitions. They are linearly dependent on the inverse of the number of conjugated double bonds in the polyene chain. The rates of triplet carotenoid formation correlate with the relative intensity of the carotenoid-bacteriochlorophyll interaction bands observed in the 800-850 nm region in the microwave induced absorption spectra. Both, the triplet energy transfer rate and the interaction bands depend on the exchange interaction between the excited and ground state wavefunctions of the two pigments.

L45 ANSWER 22 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:274084 HCAPLUS
DOCUMENT NUMBER: 122:122509
TITLE: Anti-human immunodeficiency virus activity of a novel class of thiopurine-based oligonucleotides
AUTHOR(S): Meyer, Rich B., Jr.; **Gall, Alexander A.**; Gorn, Vladimir V.
CORPORATE SOURCE: MicroProbe Corp., Bothell, WA, 98021, USA
SOURCE: ACS Symposium Series (**1994**), 580(Carbohydrate Modifications in Antisense Research), 199-210
CODEN: ACSMC8; ISSN: 0097-6156
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel class of oligonucleotides with broad-spectrum antiviral activity is described. These oligonucleotides contain 1-methyl-6-thiopurine heterocyclic bases, which are essential for activity. They also contain the 2'-O-Me ribose modification, and the most active members of the class have normal phosphodiester linkages. Members of this class of oligonucleotides are potent inhibitors of HIV replication in cultured fresh peripheral mononuclear blood cells at concns. in the range of 30 nM.

L45 ANSWER 23 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:648028 HCAPLUS
DOCUMENT NUMBER: 121:248028
TITLE: Targetting of therapeutic oligonucleotides using lysosomal proteinase-sensitive conjugates of peptides and oligonucleotides
INVENTOR(S): Meyer, Rich B. Jr.; **Gall, Alexander A.**; Reed, Michael W.
PATENT ASSIGNEE(S): Microprobe Corporation, USA
SOURCE: PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 9413325	A2	19940623	WO 1993-US12246		19931215 <--
WO 9413325	A3	19941013			

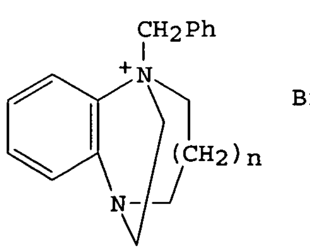
W: AU, BB, BG, BR, BY, CA, CZ, FI, HU, JP, KP, KR, KZ, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

US 5574142	A	19961112	US 1992-991199		19921215 <--
AU 9462953	A1	19940704	AU 1994-62953		19931215 <--
PRIORITY APPLN. INFO.:			US 1992-991199	A	19921215
			WO 1993-US12246	W	19931215

OTHER SOURCE(S): MARPAT 121:248028

AB Therapeutic oligonucleotides, e.g. antisense oligonucleotides, are targetted by conjugating them with a targetting peptide via a peptide linker that is labile to lysosomal, i.e. intracellular, proteinases. Inside the cell, the peptide is cleaved, releasing the oligonucleotides. The conjugate may also include moieties such as lipophilic groups, surfactants, polyamines, and other targetting ligands to improve solubility, targetting, and membrane-binding. Antisense oligonucleotides to Paramecium calmodulin mRNA with a 5'-hexylamine group were synthesized by standard chemical and conjugated with a number of peptides via iodoacetamide derivative of the oligonucleotide. The conjugates were labile to trypsin. Methods for conjugating these conjugates to suitable carriers are outlined.

L45 ANSWER 24 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:77257 HCAPLUS
DOCUMENT NUMBER: 120:77257
TITLE: Diazabicycloalkanes containing bridgehead nitrogen atoms. 28. Stevens rearrangement in benzodiazabicycloalkene series
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Mamatyuk, V. I.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, Russia
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1993**), (3), 383-7
CODEN: KGSSAQ; ISSN: 0132-6244
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 120:77257
GI



I

AB Stevens rearrangement of title compds. I (n = 0, 1) in the presence of BuLi in THF gave ring-enlarged compds. as mixts. of stereoisomers. In the latter case, both the ethylene and the trimethylene bridges participate in the reaction.

L45 ANSWER 25 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:641330 HCAPLUS

DOCUMENT NUMBER: 119:241330
TITLE: Efficient, specific interstrand cross-linking of double-stranded DNA by a chlorambucil-modified, triplex-forming oligonucleotide
AUTHOR(S): Kutyavin, Igor V.; Gamper, Howard B.; **Gall, Alexander A.**; Meyer, Rich B., Jr.
CORPORATE SOURCE: MicroProbe Corp., Bothell, WA, 98021, USA
SOURCE: Journal of the American Chemical Society (**1993**), 115(20), 9303-4
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Alkylation of a double stranded 40-mer DNA target by triple-helix forming oligodeoxyribonucleotides (ODNs) modified at the 3'- and/or 5'-ends with the clin. used nitrogen mustard chlorambucil has been investigated. Modified pyrimidine 20-mer ODNs were shown to rapidly alkylate guanines in the flanking regions of the targeted duplex at physiol. relevant concns. of potassium, magnesium, and spermine with excellent efficiency and specificity. Binding of the chlorambucil residues to the both ends of the ODN gave alkylation of both strands of the dsDNA target, resulting crosslinking of all three strands of the triplex. This technique could provide a method for selective and permanent gene inactivation and may find application in the treatment of chronic viral diseases characterized by by integrated viral genomes.

L45 ANSWER 26 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:496053 HCAPLUS
DOCUMENT NUMBER: 119:96053
TITLE: Facile preparation of nuclease resistant 3' modified oligodeoxynucleotides
AUTHOR(S): Gamper, Howard B.; Reed, Michael W.; Cox, Thomas; Virosco, Jeanne S.; Adams, A. David; **Gall, Alexander A.**; Scholler, John K.; Meyer, Rich B., Jr.
CORPORATE SOURCE: MicroProbe Corp., Bothell, WA, 98021, USA
SOURCE: Nucleic Acids Research (**1993**), 21(1), 145-50
CODEN: NARHAD; ISSN: 0305-1048
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An efficient chemical procedure for the immobilization of carboxylate containing conjugate groups onto controlled pore glass is described. The derivatized supports were used in the automated synthesis of an oligodeoxynucleotide (20-mer ODN) containing a 3' phosphodiester linked hexanol, aminohexyl, acridine, or cholesterol group. The stability of the oligomer in a hepatoma cell culture was found to be prolonged two to three fold by the presence of any one of the 3' tails. By contrast, an aminohexyl group appended to the 5' terminus of the ODN only marginally improved its nuclease resistance. These data support the notion that antisense ODNs are primarily degraded by 3'-exonucleases. Introduction of simple 3' tails which incorporate a normal phosphodiester linkage can increase ODN stability by interfering with these enzymes.

L45 ANSWER 27 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:472574 HCAPLUS
DOCUMENT NUMBER: 119:72574
TITLE: Diazabicycloalkanes with brigehead nitrogen atoms. 27. Synthesis of phenazino[1',2'-b]-1,4-diazabicyclo[2.2.2]octenes
AUTHOR(S): **Gall', A. A.**; Sil'nikov, V. N.; Shishkin, G.

V.

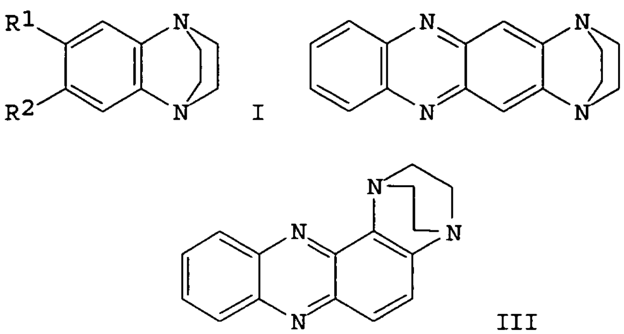
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, Russia

SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1992**), (8), 1095-7
CODEN: KGSSAQ; ISSN: 0132-6244

DOCUMENT TYPE: Journal

LANGUAGE: Russian

GI



I II III

AB Treating ethanoquinoxaline I (R1 = R2 = iodo) with o-H2NC6H4NH2 in PhNO2 containing Cu, CuI, and K2CO3 gave 24 and 7% phenazine derivs. II and III, resp. Addnl. obtained were the o-nitroanilino derivs. of I (R1 = R2 = iodo, R1 = iodo, R2 = H).

L45 ANSWER 28 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:428105 HCAPLUS

DOCUMENT NUMBER: 119:28105

TITLE: Diazabicycloalkanes with bridgehead nitrogen atoms. 26. Reactions of benzo[b]-1,4-diazabicyclo[2.2.2]octene hydroxyethyl derivatives

AUTHOR(S): Doronina, S. O.; **Gall', A. A.**; Shishkin, G. V.

CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, Russia

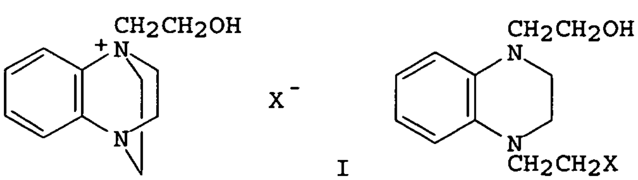
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1992**), (8), 1091-4
CODEN: KGSSAQ; ISSN: 0132-6244

DOCUMENT TYPE: Journal

LANGUAGE: Russian

OTHER SOURCE(S): CASREACT 119:28105

GI



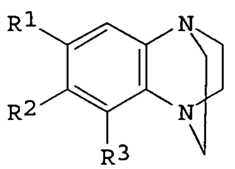
I II

AB Heating the title compds. I (X = Cl, F, I) in nonaq. solvents (toluene,

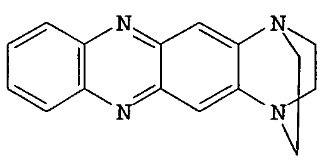
benzene, dioxane, MeCN) or thermolysis at 120-130° resulted in ring cleavage with formation of tetrahydroquinoxalines II in 70-80% yield. Dealkylation of I was observed in the presence of Me3COK.

L45 ANSWER 29 OF 56 HCAPLUS

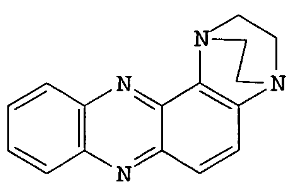
ACCESSION NUMBER: 1993:213042 HCAPLUS
DOCUMENT NUMBER: 118:213042
TITLE: Synthesis of a new heterocyclic system containing 1,4-diazabicyclo[2.2.2]octene fragment
AUTHOR(S): **Gall, A. A.**; Silnikov, V. N.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, Russia
SOURCE: Sibirskii Khimicheskii Zhurnal (**1992**), (4), 113-16
CODEN: SKZHEC; ISSN: 0869-2793
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 118:213042
GI



I



II



III

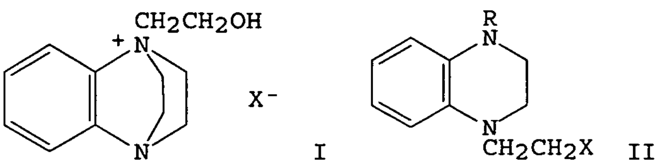
AB Reaction of iodo- or diiodobenzodiazabicyclooctenes I (R3 = H; R1 = iodo, R2 = H; R1 = R2 = iodo, resp.) with o-phenylendiamine under Ullmann condensation conditions gave a mixture of phenazinodiazabicyclooctenes II and III. The II to III isomer ratio depends on the quality of the copper catalyst. The total yield of isomers is 25-30%. The total yields of the reactions with mono- and diiodo derivs. were the same. The reaction was accompanied by formation of much tar in the reaction mixture With the 3'-iodo derivative I (R3 = iodo, R1 = R2 = H) total conversion to tar took place. Under the same conditions the reaction of I (R3 = iodo, R1 = R2 = H; R1 = iodo, R2 = R3 = H) with o-nitroaniline gave the corresponding o-nitroanilino derivs. Attempts to obtain compds. II and III from the o-nitroanilino derivs. under conditions of phenazine formation from 2-nitrodiphenylamine were unsuccessful. Much tar formed in both cases.

L45 ANSWER 30 OF 56 HCAPLUS

ACCESSION NUMBER: 1993:169067 HCAPLUS
DOCUMENT NUMBER: 118:169067
TITLE: Synthesis and properties of hydroxyethyl derivatives of benzo[b]-1,4-diazabicyclo[2.2.2]octene
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Gall, A. S.; Shishkin, G. V.
CORPORATE SOURCE: Novosibirsk. Inst. Bioorg. Khim., Russia
SOURCE: Sibirskii Khimicheskii Zhurnal (**1992**), (5),

55-9
CODEN: SKZHEC; ISSN: 0869-2793
DOCUMENT TYPE: Journal
LANGUAGE: Russian

GI



AB 1-(2-Hydroxyethyl)benzo[b]-1-azonia-4-azabicyclo[2.2.2]octene chloride I (X = Cl) was prepared by treating benzo[b]-1,4-diazabicyclo[2.2.2]octene with 2-chloroethanol in 54% yield. The corresponding fluoride and iodide were obtained from I by ion exchange. The reactions of compds. I (X = Cl, F, I) were investigated. Both heating in dry solvents (toluene, benzene, dioxane, acetonitrile) and thermolysis (120-130 °C) of salts I lead to a cleavage of the ethylene bridge with the formation of the corresponding N-(2-hydroxyethyl)-N'-(2-haloethyl)-1,2,3,4-tetrahydroquinoxalines II (R = CH2CH2OH, X = halo). Dealkylation of the hydroxyethyl group of I occurs mainly in the presence of a homogeneous base; when refluxed in water salts I are stable. When heated in an ampul (120 °C, 5h) benzo[b]-1,4-diazabicyclo[2.2.2]octene does not react with ethylene oxide in benzene or dioxane; but in chloroform some byproducts of reactions with dichlorocarbene were observed, e.g. formylquinoxaline derivs. II (R = CHO, CH2CH2O2CH, X = Cl).

L45 ANSWER 31 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:97289 HCAPLUS
DOCUMENT NUMBER: 118:97289

TITLE: Atomic force microscopy imaging of double stranded DNA and RNA

AUTHOR(S): Lyubchenko, Yuri L.; **Gall, Alexander A.**; Shlyakhtenko, Lyuda S.; Harrington, Rodney E.; Jacobs, Bertram L.; Oden, Patrick I.; Lindsay, Stuart M.
CORPORATE SOURCE: Dep. Phys., Arizona State Univ., Tempe, AZ, 85287, USA

SOURCE: Journal of Biomolecular Structure & Dynamics (**1992**), 10(3), 589-606
CODEN: JBSDD6; ISSN: 0739-1102
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A procedure for imaging long DNA and double-stranded RNA (dsRNA) mols. using atomic force microscopy (AFM) is described. Stable binding of double-stranded DNA mols. to the flat mica surface is achieved by chemical modification of freshly cleaved mica under mild conditions with 3-aminopropyltriethoxy silane. Striking images have been obtained of intact lambda DNA, Hind III restriction fragments of lambda DNA, and dsRNA from reovirus. These images are stable under repeated scanning and measured contour lengths are accurate to within a few percent. This procedure leads to strong DNA attachment, allowing imaging under water. The widths of the DNA images lie in the range of 20-80 nm for data obtained in air with com. available probes. The work demonstrates that AFM is now a routine tool for simple measurements such as a length distribution. Improvement of substrate and sample preparation methods are needed to achieve yet higher resolution

L45 ANSWER 32 OF 56 HCAPLUS
ACCESSION NUMBER: 1993:22201 HCAPLUS
DOCUMENT NUMBER: 118:22201
TITLE: Diazabicycloalkanes with a bridgehead nitrogen atom. 25. Influence of 3'-substituents on the direction of hydroxyethylation of benzo-1,4-diazabicyclo[2.2.2]octenes
AUTHOR(S): **Gall, A. A.**; Trachum, A. S.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, Russia
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1992**), (2), 215-18
CODEN: KGSSAQ; ISSN: 0132-6244
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 118:22201
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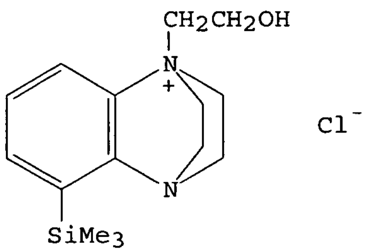
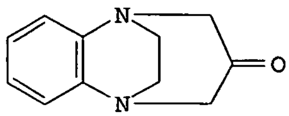
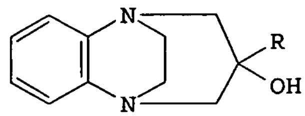
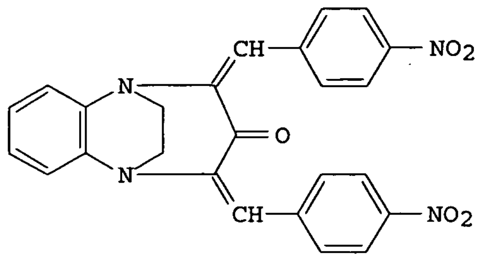


I

AB The influence of substituents in the 3' and 6' positions of benzo[b]-1,4-diazabicyclo[2.2.2]octene on the reactivity of the N atoms in hydroxylethylation reactions may be attributed to steric hindrance or anchimeric assistance. Depending on the reaction conditions and substituents in the aromatic ring mono- and bis quaternary salts, e.g. I, were obtained.

L45 ANSWER 33 OF 56 HCAPLUS
ACCESSION NUMBER: 1992:571402 HCAPLUS
DOCUMENT NUMBER: 117:171402
TITLE: Benzo[f]-1,5-diazabicyclo[3.2.2]nonenes substituted in the alicyclic group
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Sibirskii Khimicheskii Zhurnal (**1992**), (3), 56-9
CODEN: SKZHEC; ISSN: 0002-3426
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI

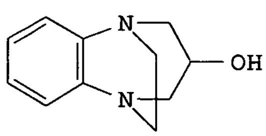
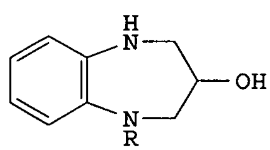
 I  II



III

AB Benzo[f]-1,5-diazabicyclo[3.2.2]nonan-3-one (I) was prepared by oxidation of the alc. (II, R = H) with DCC/Me2SO. I was converted to the (2,4-dinitrophenyl)hydrazone, the dibenzylidene derivative III, and, by a Grignard reaction, to stereoisomers of alc. II (R = Ph). Treatment of I with HBr gave 1,2,3,4-tetrahydroquinoxaline.

L45 ANSWER 34 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:469837 HCAPLUS
DOCUMENT NUMBER: 117:69837
TITLE: Stereoisomers of 3-substituted benzo[f]-1,5-diazabicyclo[3.2.2]nonene
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Shishkin, G. V.; Mamatyuk, V. I.; Sal'nikov, G. E.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Sibirskii Khimicheskii Zhurnal (**1992**), (2), 81-5
CODEN: SKZHEC; ISSN: 0002-3426
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI

 I  II

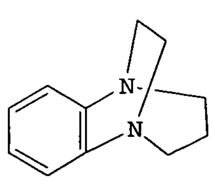
AB Exo/endo stereoisomers of the title compound (I) were synthesized in three stages from tetrahydrobenzodiazepinol (II; R = H). At the first stage II (R = H) was monoacylated by acetic anhydride in ethanol in a good yield. There are two sets of proton signals in the NMR spectrum of II [R = Ac (III)]. An anal. of the temperature dependence of the NMR was carried out to prove that these sets correspond to the conformers in a 4:1 ratio due to hindered rotation of the COCH3-group around the C-N bond. The reaction of III with ethylene oxide in acetic acid followed by cyclization in boiling hydrobromic acid gave nearly equal amts. of stereoisomers of I (according to HPLC). The separation of stereoisomeric I was accomplished by acylation with acetic anhydride and fractional crystallization Alkaline hydrolysis of acylated

I restored the stereoisomers of I.

L45 ANSWER 35 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:465811 HCAPLUS
DOCUMENT NUMBER: 117:65811
TITLE: Imaging DNA molecules chemically bound to a mica surface
AUTHOR(S): Lindsay, S. M.; Lyubchenko, Yu. L.; **Gall, A. A.**; Shlyakhtenko, L. S.; Harrington, R. E.
CORPORATE SOURCE: Dep. Phys., Arizona State Univ., Tempe, AZ, 85287, USA
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (**1992**), 1639(Scanning Probe Microsc.), 84-90
CODEN: PSISDG; ISSN: 0277-786X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A procedure is described for imaging DNA mols. using Atomic Force Microscopy (AFM). Double stranded DNA binds to a mica surface modified by treatment with 3-aminopropyltriethoxysilane to yield AFM images that are stable under repeated scanning. This procedure was used to obtain high quality images of unstained linear DNA mols. and circular DNA mols. The resolution was limited to tens of nanometers by the profile of the AFM tips.

L45 ANSWER 36 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:425660 HCAPLUS
DOCUMENT NUMBER: 117:25660
TITLE: Diazabicycloalkanes with bridgehead nitrogen atoms. 22. Conformational analysis of benzodiazabicycloalkenes. Iteration method of evaluating spectral and thermodynamic parameters
AUTHOR(S): Sal'nikov, G. E.; **Gall, A. A.**; Shishkin, G. V.; Mamatyuk, V. I.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1991**), (10), 1402-7
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI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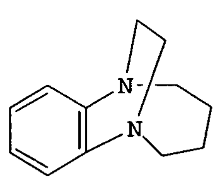
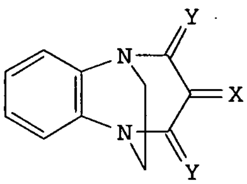
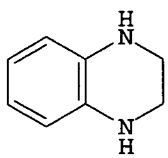

II

AB The conformational equilibrium of 1,5-diazabenzo[f]bicyclo[3.2.2]nonane (I) and 1,6-diazabenzo[g]bicyclo[4.2.2]decene (II) were examined by 13C and 1H NMR at 20-110°. Exchange interactions are observed in this temperature range for I, and the ratio of invertomers changed from 55:45 to 73:27, resp. The equilibrium thermodn. (ΔH and ΔS) data for I were determined iteratively from the J and δ NMR data for each conformer. The inversional activation energies (Ea) of I (<30 kJ mol-1) and II (42.3 kJ mol-1) were determined by lineshape anal. The effects leading to the low inversional barrier in I relative to II were discussed.

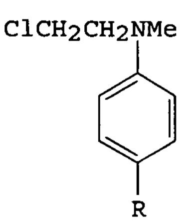
L45 ANSWER 37 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:214459 HCAPLUS
DOCUMENT NUMBER: 116:214459
TITLE: Diazabicycloalkanes with bridgehead nitrogen atoms. 24. Synthesis and reactions of benzo[f]-1,5-diazabicyclo[3.2.2]nonen-3-one
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1991**), (8), 1117-20
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI


I


II

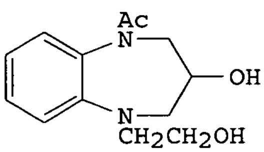
AB The title compound I (X = O; Y = H2) was prepared from the corresponding exo- or endo-alc. by treatment with N,N'-dicyclohexylcarbodiimide-DMSO. Its reactions with 2,4-(NO2)2C6H3NHNH2, PhMgBr, p-O2NC6H4CHO and HBr afforded I [X = 2,4-(O2N)2C6H4NHN; Y = H2], I (X = OH,Ph; Y = H2), I (X = O; Y = p-O2NC6H4CH) and tetrahydroquinoxaline II.

L45 ANSWER 38 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:151233 HCAPLUS
DOCUMENT NUMBER: 116:151233
TITLE: Reagents for specific modification of biopolymers. V. Synthesis of 1-amino-3-[4-(N-2-chloroethyl-N-methylamino)phenyl]propane
AUTHOR(S): **Gall, A. A.**; Ivanova, T. M.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Sibirskii Khimicheskii Zhurnal (**1991**), (4), 27-31
CODEN: SKZHEC; ISSN: 0002-3426
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 116:151233
GI


I

AB The title compound (I; R = CH2CH2CH2NH2) (II) was prepared from substituted aniline I (R = H) by vinylformylation with PhNMeCH:CHCHO in CHCl3 containing POCl3 to give 27% I (R = CH:CHCHO). Oximation with NH2OH and subsequent reduction with H2 over Pd in Et2O-HCl gave II. Similar reduction of I (R = CH:NOH) gave 97% I (R = CH2NH2) (III). This is an improved preparation of III, which is used for specific modification of nucleic acids.

L45 ANSWER 39 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:106247 HCAPLUS
DOCUMENT NUMBER: 116:106247
TITLE: Diazabicycloalkanes with bridgehead nitrogen atoms. 23. Synthesis and properties of benzo[f]-1,5-diazabicyclo[3.2.2]nonen-3-ol
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Shishkin, G. V.; Mamatyuk, V. I.; Sal'nikov, G. E.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1991**), (7), 971-5
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI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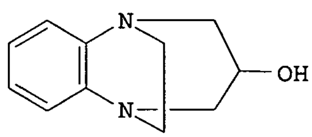
II

AB Intramol. cyclization of benzodiazepinol I gave benzodiazabicyclononenol II and a subsequent treatment with Ac2O afforded its acetates. The stereoisomeric ratio of II and the configuration of its substituents were determined

L45 ANSWER 40 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:21017 HCAPLUS
DOCUMENT NUMBER: 116:21017
TITLE: Diazabicycloalkanes with nitrogen atoms in bridgehead positions. 21. Heteroatom-promoted lithiation of benzo[b]-1,4-diazabicyclo[2.2.2]octene and introduction of substituents into the annelating benzene ring
AUTHOR(S): **Gall, A. A.**; Trachum, A. S.; Romantsev, V. A.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1991**), (6), 798-803
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 116:21017
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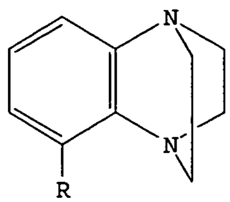


I

AB The lithiation of the title compound I (R = H) gave I (R = Li), the reaction of which with a no of electrophiles afforded derivs. I [R = Br, I, CO2H, OH, SiMe3, B(OH)3, CHO, 1-hexylthio].

L45 ANSWER 41 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:536635 HCAPLUS
DOCUMENT NUMBER: 115:136635
TITLE: More efficient alkylating oligonucleotide derivatives for the sequence-specific chemical modification of dsDNA
AUTHOR(S): Vlasov, V. V.; Godovikov, A. A.; **Gall, A. A.**; Ivanova, E. M.; Semeryanova, A. U.
CORPORATE SOURCE: Inst. Bioorg. Chem., Novosibirsk, 630090, USSR
SOURCE: Nucleosides & Nucleotides (**1991**), 10(1-3), 527-9
CODEN: NUNUD5; ISSN: 0732-8311
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A conference on coupling reaction of (pT)16 derivs. bearing alkylating groups at the 5'-terminal phosphate by the flexible linker alkylates the dsDNA efficiently in vicinity of (A18)(T18) sequences.

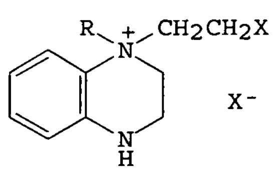
L45 ANSWER 42 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:479850 HCAPLUS
DOCUMENT NUMBER: 115:79850
TITLE: Adsorption of complexes with aromatic ligands on carbon supports as a means for obtaining heterogenized catalysts
AUTHOR(S): Keterling, A. A.; Lisitsyn, A. S.; Likholobov, V. A.; **Gall, A. A.**; Trachum, A. S.
CORPORATE SOURCE: Inst. Katal., Novobirsk, USSR
SOURCE: Kinetika i Kataliz (**1990**), 31(6), 1453-7
CODEN: KNKTA4; ISSN: 0453-8811
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The interactions of Pd complexes containing organic ligands with different types of supports were studied and the possibility of stable adsorption on carbonaceous materials was established. The localization site of the Pd center has a strong effect on the catalytic properties. During the vinyl exchange reaction (e.g., of vinyl acetate with propionic acid), surface-grafted complexes exhibit high activity in the presence of ligands which allow the Pd atom to be removed some distance from the substrate surface. At the same time, close contact of the active center with the support during adsorption of planar phenanthroline complexes leads to a decrease in their catalytic activity for vinyl exchange.

L45 ANSWER 43 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:150657 HCAPLUS
DOCUMENT NUMBER: 112:150657

TITLE: Preparation, structure and magnetic properties of copper(II) complexes with 3'-hydroxybenzo[1',2'-b]-1,4-diazabicyclo[2.2.2]octene
AUTHOR(S): Savel'eva, Z. A.; Larionov, S. V.; **Gall, A. A.**; Trachum, A. S.; Romanenko, G. V.; Podberezskaya, N. V.; Ikorskii, V. N.
CORPORATE SOURCE: Inst. Neorg. Khim., Novosibirsk, USSR
SOURCE: Zhurnal Neorganicheskoi Khimii (**1989**), 34(10), 2603-9
CODEN: ZNOKAQ; ISSN: 0044-457X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 112:150657

AB [CuL(NO3)2]2, CuL2(NO3)2 and CuL2(ClO4)2 (L = 3'-hydroxybenzo[1',2'-b]-1,4-diazabicyclo[2.2.2]octene) were prepared and characterized by IR and diffuse reflectance spectra and magnetic susceptibility measurements. [CuL(NO3)2]2 is triclinic, space group P.hivin.1, a 8.830(4), b 9.224(4), c 9.230(3) Å, α 87.76(3), β 113.74(3), α 107.41(3)°, Z = 2, R = 0.066. In the dimer L bridges the 2 Cu atoms through the hydroxy group; each Cu atom is octahedral with L being tridentate and the 2 NO3- groups being monodentate. In the dimer weak exchange interaction is observed

L45 ANSWER 44 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:613996 HCAPLUS
DOCUMENT NUMBER: 111:213996
TITLE: Diazabicycloalkanes with nitrogen atoms in bridgehead positions. 18. Study of intramolecular cyclization of 1-(β-haloethyl)-1,2,3,4-tetrahydroquinoxalinium salts in acid medium
AUTHOR(S): Doronina, S. O.; **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1989**), (3), 372-8
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 111:213996
GI



I

AB Rate consts. were determined for the hydrolysis of title salts I (R = H, Me; X = Cl, Br) to the hydroxyethyl analogs and for the cyclization of I to benzodiazabicyclooctene systems. When R = Me, cyclization was accelerated and hydrolysis suppressed.

L45 ANSWER 45 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:613995 HCAPLUS
DOCUMENT NUMBER: 111:213995
TITLE: Diazabicycloalkanes with nitrogen atoms in bridgehead

positions. 17. Substituent effects affecting proton affinity and cleavage of benzo[b]-1,4-diazabicyclo[2.2.2]octene by ethyl chloroformate
AUTHOR(S): **Gall, A. A.**; Doronina, S. O.; Shishkin, G. V.; Voityuk, A. A.; Bliznyuk, A. A.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1989**), (3), 366-71
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 111:213995
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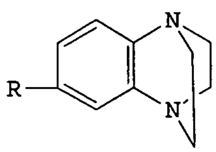
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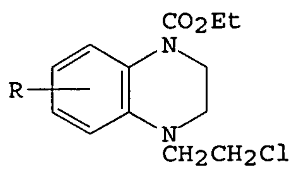
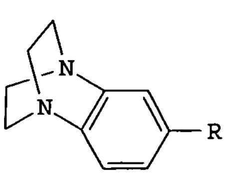
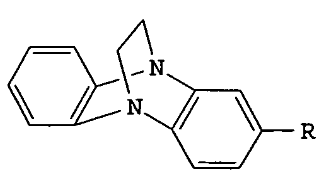

II

AB Ring cleavage of title heterocycles I (R = H, NO2, MeO) by ClCO2Et gave tetrahydroquinoxalines II (R = H) and the 6- and 7-isomers of II (R = NO2, MeO). The NO2 group retarded the ring cleavage by a factor of 40, compared with I (R = H); the MeO group had no appreciable effect on the rate. The isomer ratio of II (R = NO2, MeO) agreed with the proton affinities of I and indicated a dominant role of inductive effects of R.

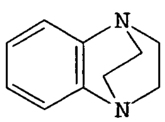
L45 ANSWER 46 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:192767 HCAPLUS
DOCUMENT NUMBER: 110:192767
TITLE: Diazabicycloalkanes with bridgehead nitrogen. 16. Synthesis and properties of benzo[b]-1,4-diazabicyclo[2.2.2]octene and dibenzo[b,e]-1,4-diazabicyclo[2.2.2]octadiene containing primary aromatic amino groups
AUTHOR(S): **Gall, A. A.**; Sil'nikov, V. N.; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1988**), (6), 831-7
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 110:192767
GI


I


II

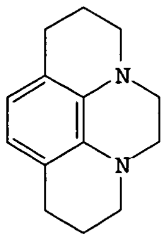
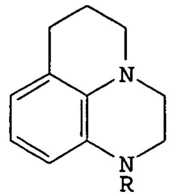
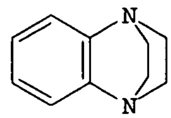
AB 4'-Aminobenzo[1',2'-b]-1,4-diazabicyclo[2.2.2]octene (I; R = NH2) and -dibenzo[1',2'-b,e]-1,4-diazabicyclo[2.2.2]octadiene (II; same R) were prepared by cyclizing N-(2-chloroethyl) derivs. of 1,2,4-$(H_2N)_3C_6H_3$ and aminophenazine, resp., and also by catalytic hydrogenation of I (R = NO_2) and II (R = $NHCH_2Ph$), resp. The corresponding azides were also prepared

L45 ANSWER 47 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:439752 HCAPLUS
DOCUMENT NUMBER: 107:39752
TITLE: Diazabicycloalkanes with nitrogen atoms at the node positions. 13. Reaction of benzo[b]-1,4-diazabicyclo[2.2.2]octene with electrophiles
AUTHOR(S): **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1986**), (9), 1239-45
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 107:39752
GI


I

AB Benzodiazabicyclooctene I undergoes electrophilic substitution in the aromatic ring under drastic conditions, showing meta-directing influence of the N atoms.

L45 ANSWER 48 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:558379 HCAPLUS
DOCUMENT NUMBER: 99:158379
TITLE: Diazabicycloalkanes with nitrogen atoms in nodal positions. 9. Intramolecular cyclization of N-(γ-bromopropyl)tetrahydroquinoxalines and behavior of benzo[f]-1,5-diazabicyclo[3.2.2]nonene in hydrobromic acid
AUTHOR(S): **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1983**), (5), 677-81
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 99:158379
GI

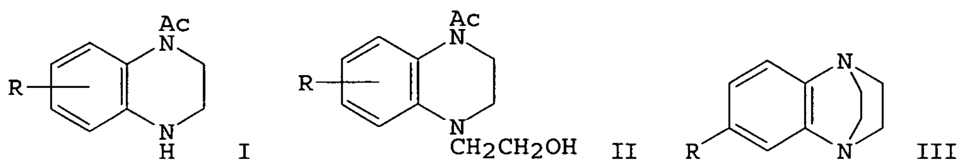
 I  II  III

AB 1,2,3,4-Tetrahydroquinoxaline was heated with Br(CH2)3Br for 20 h at 130-140° in the presence of CaO to give 13% I instead of the expected diazabicyclononene. Analogous treatment of the 1-acetyl derivative gave 23% II (R = Ac), which was deacetylated by HBr to give 60% II (R = H). The latter could also be prepared by isomerization of III by HBr.

L45 ANSWER 49 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:487428 HCAPLUS
DOCUMENT NUMBER: 99:87428
TITLE: Diazabicycloalkanes with nitrogen atoms in nodal positions. 10. Intramolecular cyclization reactions of β-bromoethyl- and γ-bromopropyl-N,N'-alkylene-o-phenylenediamines
AUTHOR(S): **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, 630090, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1983**), (5), 682-7
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 99:87428
GI For diagram(s), see printed CA Issue.
AB The rate constant for intramol. cyclization of I to II (n = 3) is lower than that for crystallization to III, and the I-II (n = 3) reaction is reversible. However, the rate of cyclization of IV (n = 3) to II (n = 3) is greater than that of IV (n = 2) to II (n = 2) by a factor of >10.

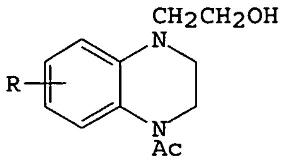
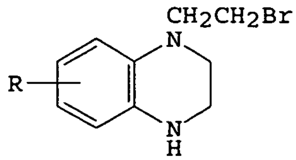
L45 ANSWER 50 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1982:85534 HCAPLUS
DOCUMENT NUMBER: 96:85534
TITLE: Diazabicycloalkanes with nitrogen atoms in bridgehead positions. 6. Synthesis and some properties of benzo[f]-1,5-diazabicyclo[3.2.2]nonene and benzo[g]-1,6-diazabicyclo[4.2.2]decene
AUTHOR(S): Shishkin, G. V.; **Gall, A. A.**; Zloba, G. A.
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1981**), (11), 1538-42
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 96:85534
GI For diagram(s), see printed CA Issue.
AB Acetylation of diazabicycloalkenes I (n = 3, 4; R = R1 = H) gave I (R = Ac; R1 = H) (II) in 76 and 64% yield, resp. II and ethylene oxide gave I (R = Ac, R1 = CH2CH2OH) (III) in 51 and 45% yield, resp. III were cyclized to give IV. IV (n = 4) was also prepared starting from I (R = tosyl, R1 = H) by successive hydroxyethylation and cyclization.

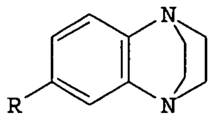
L45 ANSWER 51 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:604591 HCAPLUS
DOCUMENT NUMBER: 93:204591
TITLE: Diazabicycloalkanes with nitrogen atoms at junctions. 3. Heterocyclic system of benzo[b]-1,4-diazabicyclo[2.2.2]octene
AUTHOR(S): Shishkin, G. V.; **Gall, A. A.**
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1980**), (6), 827-30
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 93:204591
GI



AB Treatment of tetrahydroquinoxalines I (R = H, Me) with ethylene oxide gave quinoxalineethanols II in 58 and 73% yield, resp. Cyclization of II with 48% HBr gave benzodiazabicyclooctanes III as the dihydrobromide salts in 50 and 25% yield, resp.; the salts were neutralized to give the free bases.

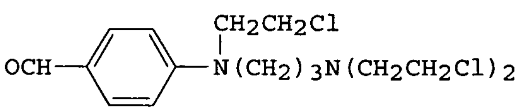
L45 ANSWER 52 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:603562 HCAPLUS
DOCUMENT NUMBER: 93:203562
TITLE: Diazabicycloalkanes with nitrogen atoms at junctions. 4. Intramolecular cyclization of N-(β-X-ethyl)-1,2,3,4-tetrahydroquinoxalines and behavior of benzo[b]-1,4-diazabicyclo[2.2.2]octenes in acid media
AUTHOR(S): Shishkin, G. V.; **Gall, A. A.**
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, USSR
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (**1980**), (6), 831-6
CODEN: KGSSAQ; ISSN: 0453-8234
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI

 I  II

 III

AB The intramol. cyclization of quinoxalineethanols I (R = H, Me) in refluxing HBr was studied by liquid microcolumn chromatog. The hydrolysis of the amide group proceeded quickly while the replacement of the OH group to give II was somewhat slower. II were cyclized to give the benzodiazabicyclooctenes III. The influence of concentration of HBr and Br-, acid (HI or HBr) and temperature on the equilibrium and the side reactions (hydrolysis, dialkylation) was also investigated.

L45 ANSWER 53 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:485577 HCAPLUS
DOCUMENT NUMBER: 91:85577
TITLE: Directed modification of bacteriophage T7 DNA in the region of early genes by means of a complementary RNA transcript carrying multiple alkylating groups
AUTHOR(S): Salganik, R. I.; Dianov, G. L.; Kokoza, E. B.; Ovchinnikova, L. P.; Kurbatov, Y. A.; Mustaev, A. A.; **Gall, A. A.**; Shishkin, G. V.
CORPORATE SOURCE: Inst. Cytol. Gen., Novosibirsk State Univ., Novosibirsk, USSR
SOURCE: Molekulyarnaya Biologiya (Moscow) (**1979**), 13(3), 625-32
CODEN: MOBIBO; ISSN: 0026-8984
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI


I

AB DNA from phage T7 was transcribed in an Escherichia coli cell-free system, and the transcript (representing early T7 genes) was alkylated with N,N,N'-tri(β-chloroethyl)-N'-(p-formylphenyl)-1,3-propylenediamine (I). Alkaline hydrolysis and paper chromatog. of the modified RNA showed that 5-6% of the bases were alkylated, and that alkylation occurred only on adenine and guanine. Potentiometric titration of free I showed that only the 2 distal Cls are readily ionizable; reduction of the formyl substituent with $NaBH_4$ activated the N'-chloroethyl Cl. The modified transcript hybridized only with the H strand of T7 DNA. When the RNA transcript was prepared with GTP-3H, alkylated, hybridized with the DNA heavy strand, reduced with $NaBH_4$, incubated at 37° to break up duplexes, and treated with

RNase, the DNA separated from the reaction mixture by gel filtration had covalently bound 3H.

L45 ANSWER 54 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:420048 HCAPLUS
DOCUMENT NUMBER: 91:20048
TITLE: Alkylating reagents for specific modification of biopolymers. N-(p-formylphenyl)propylene-1,3-diamines containing N-β-chloroethyl groups of different reactivity
AUTHOR(S): **Gall, A. A.**; Kurbatov, V. A.; Mustaev, A. A.; Shishkin, G .V.
CORPORATE SOURCE: Novosib. Inst. Org. Khim., Novosibirsk, USSR
SOURCE: Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Khimicheskikh Nauk (**1979**), (2), 99-104
CODEN: IZSKAB; ISSN: 0002-3426
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Catalytic hydrogenation of PhNHCH2CH2CN yielded 80% PhNH(CH2)3NH2, which reacted with ethylene oxide in MeOH and with (CF3CO)2O in CH2Cl2-Et3N to give 53% HOCH2CH2NPh(CH2)3N(CH2CH2OH)2 (I) and 65% CF3CONPh(CH2)3NHCOCF3(II), resp. I was chlorinated with MeOH saturated with HCl to give 50% ClCH2CH2NPh(CH2)3N(CH2CH2Cl)2.2HCl, which was formylated with DMF-POCl3 to give 74% 4-HCOC6H4N(CH2CH2Cl)(CH2)3N(CH2CH2Cl)2 (III), identified as the oxalate. II was methylated with NaH and then MeI in DMF to give 90% PhNH(CH2)3NHMe, which was treated with ethylene oxide and then as I above to give 4-HCOC6H4N(CH2CH2Cl)(CH2)3NMeCH2CH2Cl (IV). The unreactive 2-chloroethyl group in III and IV, that closest to the aromatic ring, was activated by borohydride reduction of the formyl group.

L45 ANSWER 55 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1963:425544 HCAPLUS
DOCUMENT NUMBER: 59:25544
ORIGINAL REFERENCE NO.: 59:4614h,4615a
TITLE: Ion-molecule reactions leadong to NO+ formation
AUTHOR(S): **Gall, A.**; Giardini-Guidon, A.; Volp, G. G.
CORPORATE SOURCE: Univ. Rome
SOURCE: Journal of Chemical Physics (**1963**), 39(3), 518-21
CODEN: JCPSA6; ISSN: 0021-9606
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Possible ion-mol, reactions leading to NO+ formation were investigated. It has been found that O+ + N2 → NO+ + N, k1 ≈ 2.2 + 10-11cc./sec.; N2+ + O2 → NO+ + NO, k2 ≤ 2.1 + 10-31; O2+ + N2 → NO+ + NO, k5 ≤ 2.1 + 10-13. Evidence also was found for the following reaction of N+ ions: N+ + O2 → NO+ + O, k6 ≈ 1 + 10-10 cc./sec. and N+ + CO2 → NO+ + CO, k7 ≈ 3 + 10-11.

L45 ANSWER 56 OF 56 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1906:3508 HCAPLUS
DOCUMENT NUMBER: 0:3508
TITLE: Heat of combination of metals in the formation of alloys
AUTHOR(S): **Gall, A.**
SOURCE: Philosophical Magazine (1798-1977) (**1900**), 49, 405
From: J. Phys. Chem. 5(1) 74, 1901

CODEN: PHMAA4; ISSN: 0031-8086
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Mixtures and alloys were dissolved in nitric acid and the difference taken as the heat of combination. With zinc and copper, there is a minimum negative heat effect with about 15-20 percent copper, and a maximum positive heat effect with about thirty-eight percent copper. Alloys of silver and copper show little or no heat of combination.

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